## CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

#### Name and address of submitting body:

Electronics Sector Skills Council of India

Address: 602,604,608, 6th Floor

Ansal Chambers II

Bhikaji Cama Place, New Delhi-110066

Tel: 011 – 46035050

#### Name and contact details of individual dealing with the submission

Name: Mr. Piyush Chakraborty

Position in the organisation: Officiating Head

Address if different from above: Same as above

Tel number(s):

E-mail address: ceo@essc-india.org

List of documents submitted in support of the Qualifications File

1. Model Curriculum

Model Curriculum to be added which will include the following:

- Indicative list of tools/equipment to conduct the training
- Trainers qualification
- Lesson Plan
- Distribution of training duration into theory/practical/OJT component

**NCVET Code** 

2021/EHW/ESSC/04791

# SUMMARY

1	Qualification Title: Drone Service Technician
2	Qualification Code, if any: ELE/Q7003
3	NCO code and occupation: NIL
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term):
	Responsible for repair and maintenance of the drone
5	Body/bodies which will award the qualification: Electronics Sector Skills Council of India
6	Body which will accredit providers to offer courses leading to the qualification: Electronics Sector Skills Council of India
7	Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy): Yes
8	Occupation(s) to which the qualification gives access:
	After Sale Support-EM&B
9	Job description of the occupation:
	A Drone Service Technician conducts routine maintenance, troubleshoots and repairs malfunctioning or defective Drone while ensuring adherence to standard working practices. The individuals in this job maintain and repair drones of varying sizes that are used in various applications such as taking aerial photos or videos, transporting goods, firefighting and emergency operations, power line inspections, clandestine inspections, etc.
10	Licensing requirements: N/A
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided): N/A
12	Level of the qualification in the NSQF: Level 4
13	Anticipated volume of training/learning required to complete the qualification: 400 Hours
14	Indicative list of training tools required to deliver this qualification:
	Soldering Iron, Screwdriver, Torque Screwdriver, Nut Driver, Safety Knife, Pliers, Wire Strippers, Wire Cutters, Glue Gun, Tweezers, Multi meter, Heat Gun, Desk Light and Magnifier, Digital Weighing Scale, Wattmeter and Clamp meter, Motor Thrust Stand, Connectors
15	Entry requirements and/or recommendations and minimum age:
	10th Class with 3 years of relevant experience

	OR					
	12th Class with one year of re	elevant exp	erience			
	OR					
	I.T.I (After 10 <sup>th</sup> ) with one year	I.T.I (After 10 <sup>th</sup> ) with one year of relevant Exp				
	OR					
	Diploma (Electrical or Electronics Engineering)					
	OR					
	course of NSQF Level-3 in the Mechanical	e domain o	f Electronics	/ Electrical /		
	18 Years					
16	Progression from the qualif and academic progression)	•				
17	Arrangements for the Reco	gnition of	Prior learnin	g (RPL):		
	RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack by Electronics Sector Skills Council of India (ESSCI)					
18	International comparability be provided):	where kno	own (researc	h evidence to		
	Yet to establish					
19	Date of planned review of the	ne qualific	ation: Post 1	6 <sup>th</sup> Dec 2025		
21	Formal structure of the qua	lification				
	Mandatory components					
(i)	Title of component and identification		ated size ng hours)	Level		
	code/NOSs/Learning outcomes	Theory	Practical			
1	Introduction Module	4	0	-		
2	Repair and maintain a Drone	89	227	4		
3	Work effectively at the work place	16	24	4		
4	Apply health and safety practices at the workplace	16	24	4		
	Total	125	275			

## SECTION 1 ASSESSMENT

1	Body/Bodies which will carry out assessment: Electronics Sector Skills Council of India
2	How will RPL assessment be managed and who will carry it out? Give details of how RPL assessment for the qualification will be carried out and quality assured.
	The RPL assessment will be carried out through pre assessment, identifying the skills gaps, provide bridge training to cover the competency gap and then conduct final assessment of the candidates.
3	<ul> <li>Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.</li> <li>Assessment is done through third parties who are affiliated to ESSCI as Assessment Body. Assessors are trained &amp; certified by ESSCI through Training of Assessors program. The assessment involves two processes. The first process is gathering the evidence of the competency of individuals. The second part of the assessment process is the judgement as to whether a person is competent or not. The assessment plan contains the following information:</li> <li>What will be assessed, i.e. the competency based on each NOS</li> <li>How assessment will occur i.e. methods of assessment</li> <li>When the assessment will occur</li> <li>Where the assessment will take place i.e. context of the assessment (workplace/simulation)</li> </ul>
~	<ul> <li>The criteria for decision making i.e. those aspects that will guide judgements and</li> <li>Where appropriate, any supplementary criteria used to make a judgement on the level of performance.</li> <li>The assessment is conducted through theory, viva voce and practical.</li> </ul>

Please attach most relevant and recent documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

#### ASSESSMENT EVIDENCE

# Complete a grid for each component as listed in "Formal structure of the qualification" in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Recheroneo

#### 24. Assessment evidences

Title of Component: Drone Service Technician

# CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Drone Service Technician

Qualification Pack ELE/Q7003

Sector Skill Council Electronics Sector Skills Council of India

## **Guidelines for Assessment**

- 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
- 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- 4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
- 5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.

- 6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
- 7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practica I Marks	Project Marks	Viva Marks
ELE/7005 Repair and	maintain a	Drone		
Understanding the Drone related issues faced by the customer	8	18	-	-
<b>PC1</b> . collect information about the customer's issues	2	4		
<b>PC2</b> . select relevant troubleshooting-instruction sheet, tools, equipment and verified field replaceable parts based on SOPs and analysis of customer complaints	2	4		-
PC3. perform preliminary check-up of the Drone	2	5	-	-
<b>PC4</b> . evaluate the replacement or repair of modules on field or at the company's workshop	2	5	-	-
Performing repair and maintenance of the Drone	11	30	-	-
<b>PC5</b> . review recommended practices for switching on the Drone and the remote controller	1	4	-	-
<b>PC6</b> . review standard work practices to disassemble the defective components	1	3	-	-
<b>PC7</b> . inspect the functional components of a drone thoroughly by connecting to an external power source, using multimeters, etc.	1	3	-	-
<b>PC8</b> . identify electronic components that are malfunctioning and need to be repaired / replaced	2	3	-	-
<b>PC9</b> . perform repair of the defective components as per company specified maintenance guidelines	1	3		
<b>PC10</b> . Install repaired / fresh electronic components using appropriate tools and equipment	1	3	-	-
<b>PC11.</b> assemble the Drone components as per desirable industry practices	1	4	-	-
<b>PC12.</b> assess that the Drone is working effectively post repair and maintenance	1	3	-	-
<b>PC13.</b> dispose debris, leftover and defective parts as per standard operating procedure	2	4	-	-
Commissioning the Drone	6	12	-	-
<b>PC14</b> . perform standard safety checks of the Drone post repair and maintenance	2	4	-	-

<b>PC15</b> . perform a demo run of the Drone to ensure customer satisfaction	2	4	-	-
<b>PC16</b> . communicate with the customer to provide product and maintenance related information	2	4	-	-
Reporting to superior	5	10	-	-
<b>PC17</b> . Inform on the workload and completion status	1	2	-	-
<b>PC18</b> . report work status through proper documentation as per organizational standards	1	2	-	-
<b>PC19</b> . intimate the problems that cannot be resolved at field level with reason	1	2	-	-
<b>PC20</b> . report 100% on time completion of field repair or hardware part replacement with reference to agreed target and time or reasons for not meeting target	1	2	0	
NOS Total	30	70	-	-
ELE/N9905 Work effecti	vely at the w	orkplace		
Communicate effectively at the workplace	4	13	-	-
<b>PC1.</b> exchange information and instructions with others at the workplace clearly, accurately and within agreed timelines	1	3	-	-
<b>PC2.</b> seek clarification to obtain complete information and confirm understanding while receiving communications	0	2	-	-
<b>PC3.</b> display helpful behaviour by assisting others in performing tasks where required	1	2	-	-
<b>PC4.</b> follow communication etiquette while working to convey politeness, assertiveness, care and professionalism	1	3	-	-
<b>PC5.</b> share all relevant information with stakeholders in agreed formats using appropriate mode of communication	1	3	-	-
Work in an effective manner	5	13		
PC6. identify and obtain clarity regarding organisational, team and own goals and targets	1	3	-	-
<b>PC7.</b> prioritise and plan work in order to achieve goals and targets	1	3	-	-
<b>PC8.</b> monitor own and team performance as per agreed plan	1	3	-	-
<b>PC9.</b> complete duties accurately, systematically and within required timeframes	1	2	-	-
<b>PC10.</b> maintain orderliness and cleanliness in the work area	1	2	-	-
Maintain and enhance professional competence	6	6		

<b>PC11.</b> identify own strengths and weaknesses in relation to goals and targets	1	1	-	-
<b>PC12.</b> select opportunities for continuous learning and maintaining currency of professional practice	1	1	-	-
<b>PC13.</b> develop a professional development plan to enhance professional capabilities	1	1	-	-
<b>PC14.</b> examine developments and trends in field of work and potential impact on work	1	1	-	-
<b>PC15.</b> invite peers and others to observe, and provide feedback, on own performance and practices	1	1	-	-
<b>PC16.</b> use feedback from colleagues and clients to identify and introduce, improvements at work	1	1		-
Work in a disciplined and ethical manner	6	10		
<b>PC17.</b> perform tasks as per workplace standard and in compliance with organisational policies and legislative requirements	0	1	-	-
<b>PC18.</b> display appropriate professional appearance for the workplace while adhering to organisational policy for dress code	1	1	-	-
<b>PC19.</b> demonstrate responsible and disciplined behaviors in the workplace	0	1	-	-
<b>PC20.</b> identify the cause of conflict and options for resolution when faced with situations of conflict	1	1	-	-
<b>PC21.</b> escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	1	1	-	-
<b>PC22.</b> protect the rights of the client and organisation when delivering services	1	1	-	-
PC23. ensure services are delivered equally to all clients regardless of personal and cultural beliefs	0	1	-	-
<b>PC24.</b> operate within an agreed ethical code of practice	0	1	-	-
<b>PC25.</b> recognise unethical conduct and report to an appropriate person	1	1	-	-
<b>PC26.</b> follow organisational guidelines and legal requirements on disclosure and confidentiality	1	1	-	-
Respect gender and ability differences	7	7		
<b>PC27.</b> ensure personal behavior and conduct taking gender and disability of the person into consideration	1	1		

<b>PC28.</b> adjust communication styles to reflect gender sensitivity and sensitivity towards person with disability	1	1		
<b>PC29.</b> list the different types of disabilities with their respective issues	1	1		
PC30. help PwD to overcome the challenges	1	1		
<b>PC31.</b> use inclusive language irrespective of the disability and the gender of the person	1	1		
<b>PC32.</b> ensure equal treatment for all clients, colleagues and co-workers	1	1		
<b>PC33.</b> respect personal space of colleagues and co-workers	1	1		
Adopt learning and self-direction	3	3		
PC34. understand importance of skill level advancement in the industry and develop mastery	1	1		
PC35. adapt product/service to meet the success criteria	1	1		
PC36. understand accountability for timely completion of tasks	1	1		
Develop system thinking in problem solving	2	2		
PC37. analyze the problem accurately and communicate different possible solutions to the problem	1	1		
PC38. manage to estimate the cause of the problem and validate	1	1		
Manage the emotions	3	3		
<b>PC39.</b> manage to express emotions in appropriate ways at workplace and understand the cause for the emotions	1	1		
PC40. manage response to employees' heightened emotions	1	1		
<b>PC41</b> . understand the transient nature of emotions	1	1		
Set Organizational Culture	3	3		
<b>PC42</b> . plan to build a knowledge base about the problems faced and their solutions for the organization	1	1		
<b>PC43</b> . plan to create and emotionally intelligent organizational culture	1	1		
<b>PC44</b> . plan to set appropriate organizational culture for effective communication, collaboration and team work	1	1		
NOS Total	40	60	-	-

ELE/N1002 Apply health and safe	ety practices	s at the work	olace	
Deal with workplace hazards	21	39	-	-
<b>PC1.</b> identify job-site hazardous work and state possible causes of risk or accident in the workplace	2	3	-	-
<b>PC2.</b> carry out safe working practices while dealing with hazards to ensure the safety of self and others	3	4	-	-
<b>PC3.</b> use appropriate personal protective equipment (PPE)	2	3	-	-
<b>PC4.</b> follow standard safety procedures while handling tools and equipment	2	3	-	
<b>PC5.</b> follow standard safety procedures while handling hazardous substances or working in hazardous environments	1	3	0	-
<b>PC6.</b> dispose electronic waste as per industry approved techniques	2	3	-	-
<b>PC7.</b> avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	1	3	-	-
<b>PC8.</b> state the name and location of people responsible for health and safety in the workplace	1	2	-	-
<b>PC9.</b> state the names and location of documents that refer to health and safety in the workplace	1	2	-	-
<b>PC10.</b> follow methods of accident prevention in the work environment of the job role	2	3	-	-
<b>PC11.</b> state location of general health and safety equipment in the workplace	1	2	-	-
PC12. lift heavy objects safely using correct procedures	1	3	-	-
PC13. apply good housekeeping practices at all times	1	3	-	-
<b>PC14.</b> identify common hazard signs displayed in various areas	1	2	-	-
Apply fire safety practices	4	13		
<b>PC15.</b> use the various appropriate fire extinguishers on different types of fires correctly	1	4	-	-
<b>PC16.</b> demonstrate rescue techniques applied during fire hazard	1	4	-	-
<b>PC17.</b> take preventive measures in order to prevent fire hazards	1	3	-	-
<b>PC18.</b> demonstrate how to free a person from electrocution	1	2	-	-

Follow emergencies, rescue and first-aid procedures	5	8	
<b>PC19.</b> administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.	1	2	
PC20. demonstrate basic techniques of bandaging	1	1	
<b>PC21.</b> administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases	1	2	
PC22. participate in emergency procedures	1	1	
<b>PC23.</b> demonstrate correct method to move injured people and others during an emergency	1	2	
Effective waste management/recycling practices	5	5	
<b>PC24.</b> identify recyclable and non-recyclable, and hazardous waste generated	1	1	
PC25. segregate waste into different categories	1	1	
<b>PC26.</b> ensure disposal of non-recyclable waste appropriately	1	1	
<b>PC27.</b> deposit non-recyclable and reusable material at identified location	1	1	
<b>PC28.</b> follow processes specified for disposal of hazardous waste	1	1	
NOS Total	35	65	

9

Outcomes to be assessed/NOSs to be assessed	Assessment criteria for the outcome
Provided in the above section	

#### Means of assessment 1

- Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
- 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below.)
- 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.

#### Means of assessment 2

Add boxes as required.

#### Pass/Fail

- 1. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.
- 2. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

## SECTION 2 EVIDENCE OF LEVEL

NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<ul> <li>Demands a wide range of specialised technical skill, clarity of knowledge and practice in broad range of activity involving standard and non-standard practices.</li> <li>Checking and testing the drone before deployment</li> <li>identify problem and repair / replace</li> <li>Rectifying the Drone</li> <li>Work effectively at the workplace.</li> <li>Apply health and safety practices at the workplace.</li> <li>Perform functional testing of various equipment</li> </ul>	A Drone Service technician is responsible for repair and maintenance of the drone	4
Professiona I knowledge	<ul> <li>Factual and theoretical knowledge in broad contexts within a field of work or study.</li> <li>Knowledge of the process of how to operate the drone</li> <li>Process of activation of the Drone</li> <li>Knowledge of company's policy on repair time, turnaround time, working hours</li> </ul>	A Drone service technician should know the knowledge of different processes involved in planning, repair / maintenance and then verifying the results as per the requirements. Hence Level 4	4
Professiona I skill	<ul> <li>A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.</li> <li>Communicate with customer, team and supervisor to understand the work requirement</li> <li>Identify the errors in orders</li> <li>Maintain test results and processes</li> <li>Complete the documentation of assembly and testing records</li> </ul>	A Drone service Technician should be able to use basic software in correct way to operate the assembly Drone and test the required equipment. He/she works after getting work requirements from supervisor or other team members. Hence Level 4	4

Core skill	<ul> <li>Reasonably good in:</li> <li>Processing work requirements for assembly / disassembly drone</li> <li>Analysing the product design</li> <li>Finding out the test requirements</li> <li>Testing and verifying test results</li> <li>Analysing tests</li> </ul>	A Drone Service Technician needs to find out the requirements, of customer and perform the task as per customer requirement and meet the expectations. The technician should keep the workplace clean and managed. Hence Level 4	4
Responsibil ity	<ul> <li>Responsibility of completing the work assigned and reporting the same as per standards.</li> <li>Understand the job role and follow the organisational policy</li> <li>Record and report about the work status</li> <li>Follow safety regulations at work place</li> <li>Work along with colleagues and supervisors</li> </ul>	A Drone Service Technician should record the issues and report about the same to supervisor and also update the status of the work as per organisations policy. Hence Level 4	4

## SECTION 3 EVIDENCE OF NEED

Basis	In case of SSC	In case of other Awarding Bodies (Institutes under Central Ministries and states
Need of the qualificationThe Indian electronicsindustry is one of the largest and fastest-growing industries in the world.The market growth of Drone is expected to be at a CAGR of 18%	The SSC would undertake market study and would enclose demand forecast for the proposed job role both on short-term and long-term basis to substantiate the requirement of the Qualification proposed. The SSC can produce the data from primary or authorized secondary sources as well.	departments) The Submitting Body would produce any reputable and reliable research reports, such as labour market information reports; occupational mapping or similar research carried out by Ministry/State/Any other authentic source forecasting the demand for the proposed qualification
over the forecast period (2019-24) Industry Relevance We are in the process of taking industry validation.	The SSC would undertake validation of the job roles with actual end-user industry where such employment is going to be generated and absorbed instead of generic validation of industry. The SSC would submit the endorsements from users/intended users of the qualification clearly supporting or otherwise the need for trained people against	The Submitting Body would submit the list of industry participation while preparation of the curriculum/ course content of the qualifications. These could include minutes of the meeting/ reports of these consultations

	specific job role. ( <i>The</i> <i>industry validation format</i> <i>to be used</i> )	
Usage of the qualification: This Qualification Pack will be used across Drone industry which is organised as well as unorganised	The SSC would submit details of the employment generated (wherever applicable) and realised by virtue of training in the Qualifications of the sector earlier submitted for NSQF alignment. In case of unorganized sector, case studies or evidences may be given	The submitting body would submit the details of trained and placed data in the proposed qualification (if an existing qualification is being proposed for NSQF alignment) Information about the success of the qualification should be given (e.g. uptake figures, examples of use in recruitment and placement rates (if known) should be given. However, many of the bodies that do not have placement tracking mechanism established in place would provide necessary endorsements by the state/ ministry stating that a tracking mechanism would be institutionalized and placement records shall be provided annually or later, depending on length of qualification.
Estimated uptake	The SSC would submit the estimated uptake of	The Submitting Body should submit the
The Indian Drone market is driven by Increased	the qualification and What steps were carried	estimated uptake by reflecting the number
focus of Indian	out to test the likely uptake of the	of the takers for this qualification for at
	qualification? The basis	

	Armed forces on UAV Technology	of this estimate should include data about the number of jobs or places in courses of learning which will be available to people who are awarded the qualification.	least two years from submission of the qualification			
2	Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences					
	Ministry of Electronic (MeitY)	cs and Information Technolo	ogy, Government of India			
3	What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualificationThis is the first time that this Qualification is being made. The national qualification registers as well as the Qualification Packs with NSDC have					
	been checked.					
4	What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here					
	<ul> <li>Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation.</li> <li>Monitoring of results of assessments</li> </ul>					
		dback will be sought post-p ew is scheduled in a year's t				

## **SECTION 4**

#### **EVIDENCE OF PROGRESSION**

