

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

### CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

NCVET Code

2022/TEL/TSSC/05792

#### Name and address of submitting body:

Telecom Sector Skill Council

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

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

**Name:** Mr. Krishna Nand Jha

**Position in the organization:** Assistant General Manager

**Address if different from above:** Same as above

**Tel number(s):** 0124-4148029

**E-mail address:** manager-projects@tsscindia.com

#### List of documents submitted in support of the Qualifications File

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

**SUMMARY**

<b>1</b>	<b>Qualification Title:</b> Infrastructure Technician – 5G Networks
<b>2</b>	<b>Qualification Code, if any:</b> TEL/Q4201
<b>3</b>	<b>NCO code and occupation:</b> NCO-2015/NA and Network (Passive) Installation
<b>4</b>	<b>Nature and purpose of the qualification (Please specify whether a qualification is a short term or long term):</b> <b>Infrastructure Technician – 5G Networks</b> Responsible for installing 5G network telecommunication equipment on cell tower.
<b>5</b>	<b>Body/bodies which will award the qualification:</b> Telecom Sector Skill Council
<b>6</b>	<b>Body which will accredit providers to offer courses leading to the qualification:</b> Telecom Sector Skill Council
<b>7</b>	<b>Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy):</b> Yes. SMART norms for accreditation and SSC norms for affiliation are available on the SMART portal.
<b>8</b>	<b>Occupation(s) to which the qualification gives access:</b> Network (Passive) Installation
<b>9</b>	<b>Job description of the occupation:</b>  An <b>Infrastructure Technician - 5G Networks</b> is responsible for installing 5G network telecommunication equipment on cell tower sites for a telecom service provider, including the 5G Non-standalone (NSA) and Standalone (SA) infrastructure. The individual also installs and maintains the passive infrastructure equipment installed at 5G network infrastructure sites. The person may also carry out regular repair and maintenance of the 5G network infrastructure.
<b>10</b>	<b>Licensing requirements:</b> N/A
<b>11</b>	<b>Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided):</b> N/A
<b>12</b>	<b>Level of the qualification in the NSQF:</b> Level 4
<b>13</b>	<b>Anticipated volume of training/learning required to complete the qualification:</b> 510 Hours
<b>14</b>	<b>Indicative list of training tools required to deliver this qualification:</b> Antenna test Systems & OTA, Broadband Amplifiers, RF Transceivers, Optical Fibre Cable, LC Multimode Connectors, Signal Generator, System Components, Wireless Communication Tester & Systems, Mobile Network Testing Kit, Radio Network Node, Feeder, Power Amplifier, Duplexer, Extension Ports, Power Interface Unit (PIU), Switched-mode Power Supply (SMPS), Battery Bank, Battery Charger, Turnbuckles, Shackles, Clevises, Thimbles, Remote Radio

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

	Unit (RRU), Fittings, Mounting Brackets, Bracing, Coaxial Cable, Waveguide Clamps, Restrainers, Antenna Mounts, Hanger Bolts.				
<b>15</b>	<b>Entry requirements and/or recommendations and minimum age:</b>  Class 12th <b>OR</b> Class 10th + ITI (2 years in Electronics/Telecom/IT and other relevant fields) <b>OR</b> Class 10th with 2 years of relevant experience <b>OR</b> Class 8th + ITI (2 years in Electronics/Telecom/IT and other relevant fields) with 2 years of relevant experience <b>OR</b> Diploma after 10th (2 years in Electronics/Telecom/IT and other relevant fields) <b>OR</b> Certified in NSQF-L3 Telecom Rigger – 5G and Legacy Networks with 2 Years of relevant experience  <b>17 years</b>				
<b>16</b>	<b>Progression from the qualification (Please show Professional and academic progression):</b> Cluster In-charge				
<b>17</b>	<b>Arrangements for the Recognition of Prior learning (RPL):</b>  RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack by Telecom Sector Skill Council.				
<b>18</b>	<b>International comparability where known (research evidence to be provided):</b> No				
<b>19</b>	<b>Date of a planned review of the qualification:</b> 31 March 2026				
<b>20</b>	<b>The formal structure of the qualification</b>  <b>Mandatory components</b>				
<b>(i)</b>	<b>Title of component and identification code/NOSs/Learning outcomes</b>	<b>Estimated size (learning hours)</b>			<b>Level</b>
		<b>Theory</b>	<b>Practical</b>	<b>OJT</b>	
<b>1</b>	Introduction to the role of an Infrastructure Technician – 5G Networks	08	08	-	4
<b>2</b>	Prepare for the installation of 5G network infrastructure	35	48	32	4
<b>3</b>	Install and set up the passive infrastructure equipment with the 5G equipment	60	60	48	4

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

<b>4</b>	Maintain the passive infrastructure equipment	45	46	40	4
<b>5</b>	Organize Work and Resources as per Health and Safety Standards	16	24	00	4
<b>6</b>	Interact effectively with team members and customers	16	24	00	4
	<b>Sub Total (A)</b>	<b>180</b>	<b>210</b>	<b>120</b>	

**SECTION 1**  
**ASSESSMENT**

<p><b>21</b></p>	<p><b>Body/Bodies which will carry out an assessment:</b> Telecom Sector Skill Council.</p> <p><b>Proposed Body/Bodies which will carry out an assessment:</b> The assessment will be carried out via our affiliated assessment body.</p>
<p><b>22</b></p>	<p><b>How will RPL assessment be managed and who will carry it out?</b> The RPL assessment will be managed by TSSC via its affiliate assessment body.</p>
<p><b>23</b></p>	<p><b>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.</b></p> <p>The emphasis is on practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessment papers are also checked for the various outcome-based parameters such as quality, time taken, precision, tools &amp; equipment requirement etc. The assessment results are backed by evidence collected by assessors.</p> <ol style="list-style-type: none"> <li>1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre.</li> <li>2. The assessor needs to verify the authenticity of the candidates by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate, and cross verify trainee's credentials in the enrolment form.</li> <li>3. The assessor needs to punch the trainee's roll number on all the test pieces.</li> <li>4. The assessor can take a photograph of all the students along with the assessor standing in the middle and with the center name/banner at the back as evidence.</li> <li>5. The assessor also needs to carry a photo ID card.</li> </ol> <p>The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.</p>

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.*

**24. Assessment evidence**

**Title of Component:** Infrastructure Technician – 5G Networks

**CRITERIA FOR ASSESSMENT OF TRAINEES**

**Job Role** Infrastructure Technician - 5G Networks

**Qualification Pack** TEL/Q4201

**Sector Skill Council** Telecom Sector Skill Council

**Guidelines for Assessment**

1. Criteria for assessment for each Qualifications Pack will be approved 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 approved 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 center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualifications Pack, every trainee should score a minimum of 70% of aggregate marks.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>TEL/N4202: Prepare for the installation of 5G network infrastructure</b>				
<i>Conduct the site survey</i>	<b>13</b>	<b>20</b>	-	<b>8</b>
PC1. determine the scope of work, including the identification of site selected for the installation of 5G network infrastructure	3	5	-	2
PC2. co-ordinate with the relevant personnel to conduct a site survey to determine if the selected sites meet the applicable requirements for the installation of 5G network infrastructure	4	6	-	2

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC3. check the site for safe access, ensuring no obstructions and presence of any potential dangers, such as electrical and mechanical injury risks	3	5	-	2
PC4. co-ordinate with the relevant personnel for any modifications required at the surveyed sites	3	4	-	2
<i>Prepare for the installation of 5G network infrastructure</i>	<b>17</b>	<b>30</b>	-	<b>12</b>
PC5. ensure the required authorisation is taken for installation at the identified sites and the relevant paperwork is carried out before the installation	3	6	-	2
PC6. arrange the relevant equipment, accessories, tools and equipment required for the installation	3	5	-	2
PC7. conduct the relevant checks to ensure the equipment, accessories, tools and equipment are in working condition, and get the faulty/ damaged ones replaced	3	6	-	2
PC8. assemble the required equipment and configure the networking gear for infrastructure installation	2	4	-	2
PC9. co-ordinate with the relevant personnel for the erection of 5G cell towers as per the requirement	3	4	-	2
PC10. prepare the relevant documents regarding the network infrastructure preparation activities	3	5	-	2
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>
<b>TEL/N4203: Install and set up the passive infrastructure equipment with the 5G Equipment</b>				
<i>Install the passive infrastructure equipment</i>	<b>17</b>	<b>34</b>		<b>6</b>
PC1. select the appropriate passive infrastructure equipment, such as battery bank, Switched-mode Power Supply (SMPS) unit, Power Interface Unit (PIU), Diesel Generator (DG) set, Climate Control Unit for installation at the 5G network infrastructure site	2	3	-	-
PC2. perform the relevant tests on the passive infrastructure equipment to ensure their proper functioning	1	2	-	-
PC3. install the battery bank, battery charger, and battery stand following the manufacturer's instructions, ensuring an adequate number of batteries as per the power requirements	1	3	-	-
PC4. carry out charging of the battery to ensure it is able to get charged without any issues	1	2	-	-
PC5. install the SMPS unit following the manufacturer's instructions	1	2	-	-
PC6. perform the relevant tests on the SMPS unit to ensure it is able to provide regulated output voltage, as required	1	2	-	1
PC7. install the PIU to protect against wide fluctuations and surges in the mains supply	1	2	-	-

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC8. select an appropriate location/room for the installation of DG set, ensuring appropriate ventilation, no obstruction of the natural airflow and minimum dust	1	2	-	1
PC9. ensure the DG set room has adequate space to allow good ventilation, ease of operation and serviceability	1	2	-	-
PC10. install the DG set following the manufacturer's instructions	1	2	-	1
PC11. install air cleaner for the dusty environments and anti-condensation heaters in the humid/coastal atmosphere	1	2	-	-
PC12. install the Climate Control Units to maintain the appropriate temperature at the telecom base station and telecom shelter for the efficient functioning of telecom and related equipment	1	2	-	1
PC13. ensure all the passive infrastructure equipment is installed at the appropriate locations, following the manufacturer's instructions	1	2	-	-
PC14. carry out cabling for the installed equipment, ensuring compatibility with the equipment	1	2	-	1
PC15. set up the connection between various telecom equipment and power source, ensuring safe and uninterrupted power supply	1	2	-	-
PC16. perform the relevant tests on the installed equipment to ensure their correct functioning	1	2	-	1
<i>Set up the passive infrastructure with 5G equipment</i>	<b>13</b>	<b>26</b>		<b>4</b>
PC17. install the power supply unit for gNodeB/eNodeB, ensuring its compatibility with the equipment	1	2	-	-
PC18. install a heat sink to maintain an appropriate temperature in the gNodeB/eNodeB by facilitating the flow of heat away from the equipment	1	2	-	-
PC19. connect the gNodeB / eNodeB with the power supply unit and heat sink using the appropriate types of cables, ensuring a secure connection between the equipment	1	2	-	1
PC20. ensure the power supply units have a secure connection with the mains power supply	1	2	-	-
PC21. set up a power connection between the 5G base station and power source, ensuring the recommended power supply for the equipment	1	2	-	1
PC22. use the recommended types of cables for the power supply and ensure adequate protection of the cables from weather conditions and wear and tear	1	2	-	-
PC23. set up the power connection for the 5G base stations, 5G Radio Frequency (RF) transceivers and Remote Radio Unit (RRU), ensuring to adhere to their power requirements	1	2	-	-
PC24. set up a connection between the emergency power supply equipment and the 5G network and transmission equipment	1	2	-	1

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC25. install shelter(s) and telecom ducts for the protection of passive infrastructure equipment and cabling	1	2	-	-
PC26. set up power connection at the site to provide power supply to various cell tower equipment	1	2	-	1
PC27. use the relevant Personal Protection Equipment (PPE) to ensure protection from electricity	1	2	-	-
PC28. check all the equipment for correct functioning after establishing power connections and carry out troubleshooting for any identified issues	1	2	-	-
PC29. co-ordinate with the passive infrastructure equipment manufacturer regarding any manufacturing defects	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>60</b>	-	<b>10</b>
<b>TEL/N4204: Maintain the passive infrastructure equipment</b>				
<i>Maintain the passive infrastructure equipment</i>	<b>23</b>	<b>52</b>	-	<b>14</b>
PC1. check the passive infrastructure equipment, such as battery bank, SMPS, PIU, DG set, and Climate Control Units, regularly to ensure their correct functioning	2	4	-	1
PC2. carry out preventive maintenance of the passive infrastructure equipment as per the recommended schedule	2	4	-	1
PC3. check the batteries in the battery bank to ensure they are correctly positioned	2	4	-	1
PC4. check the equipment cables to ensure they are intact, and replace the faulty/ damaged cables	2	4	-	1
PC5. test the batteries to ensure they can hold the charge, and carry out appropriate troubleshooting as required	2	4	-	1
PC6. check the SMPS to ensure it is able to control power at high frequencies and can provide a stable and efficient power supply to telecom equipment	2	4	-	1
PC7. carry out troubleshooting for any issues identified with the SMPS	1	4	-	1
PC8. perform the relevant tests on the PIU to ensure it is able to handle fluctuations and surges in the mains supply appropriately	2	4	-	1
PC9. carry out appropriate troubleshooting for the issues identified with the PIU	1	3	-	1
PC10. check the DG set for low oil pressure and level, high water temperature, overload, start failure, short circuit, phase loss, high voltage, voltage loss, etc.	2	4	-	1
PC11. carry out appropriate troubleshooting as per the manufacturer's instructions to resolve the	1	4	-	1

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

issues identified with the DG set				
PC12. check the climate control units to ensure they are functioning appropriately to protect the telecom equipment from heat damage and moisture	2	2	-	1
PC13. ensuring to use the manufacturer-recommended spare parts and maintenance tools during the maintenance of the passive infrastructure equipment	1	3	-	1
PC14. install new passive infrastructure equipment to replace the damaged or irreparable equipment	1	4	-	1
<i>Document and review the maintenance records</i>	<b>2</b>	<b>8</b>	-	<b>1</b>
PC15. maintain the record of maintenance activities	1	4	-	-
PC16. review the maintenance records to identify any recurring issues and find appropriate solutions for them	1	4	-	1
<b>NOS Total</b>	<b>25</b>	<b>60</b>	-	<b>15</b>
<b>TEL/N9101: Organise Work and Resources as per Health and Safety Standards</b>				
<i>Perform work as per quality standards</i>	<b>4</b>	<b>9</b>	-	<b>2</b>
PC1. keep workspace clean and tidy	-	1	-	-
PC2. perform individual role and responsibilities as per the job role while taking accountability for the work	1	1	-	1
PC3. record/document tasks completed as per the requirements within specific timelines	-	1	-	1
PC4. implement schedules to ensure timely completion of tasks	-	2	-	-
PC5. identify the cause of a problem related to own work and validate it	2	2	-	-
PC6. analyse problems accurately and communicate different possible solutions to the problem	1	2	-	-
<i>Maintain safe, healthy and secure working environment</i>	<b>16</b>	<b>27</b>	-	<b>4</b>
PC7. comply with organisation's current health, safety, security policies and procedures	1	1	-	-
PC8. check for water spills in and around the work space and escalate these to the appropriate authority	1	2	-	1
PC9. report any identified breaches in health, safety, and security policies and procedures to the designated person	1	2	-	1

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC10. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.	1	2	-	1
PC11. avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence	2	3	-	1
PC12. identify hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	2	1	-	-
PC13. participate regularly in fire drills or other safety related workshops organised by the company	1	3	-	-
PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	1	3	-	-
PC15. maintain appropriate posture while sitting/standing for long hours	1	1	-	-
PC16. handle heavy and hazardous materials with care, while maintaining appropriate posture	1	1	-	-
PC17. sanitise workstation and equipment regularly	1	2	-	-
PC18. clean hands with soap, alcohol-based sanitiser regularly	-	1	-	-
PC19. avoid contact with anyone suffering from communicable diseases and take necessary precautions	-	1	-	-
PC20. take safety precautions while travelling e.g. maintain 1m distance from others, sanitise hands regularly, wear masks, etc.	1	2	-	-
PC21. report hygiene and sanitation issues to appropriate authority	1	1	-	-
PC22. follow recommended personal hygiene and sanitation practices, for example, washing/sanitising hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.	1	1	-	-
<i>Conserve material/energy/electricity</i>	<b>7</b>	<b>16</b>	-	<b>3</b>
PC23. optimise usage of material including water in various tasks/activities/processes	1	2	-	-
PC24. use resources such as water, electricity and others responsibly	1	2	-	1
PC25. carry out routine cleaning of tools, machine and equipment	1	2	-	-

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC26. optimise use of electricity/energy in various tasks/activities/processes	1	3	-	1
PC27. perform periodic checks of the functioning of the equipment/machine and rectify wherever required	1	3	-	1
PC28. report malfunctioning and lapses in maintenance of equipment	1	2	-	-
PC29. use electrical equipment and appliances properly	1	2	-	-
<i>Use effective waste management/recycling practices</i>	<b>3</b>	<b>8</b>	-	<b>1</b>
PC30. identify recyclable, non-recyclable and hazardous waste	1	2	-	1
PC31. deposit recyclable and reusable material at identified location	1	3	-	-
PC32. dispose non-recyclable and hazardous waste as per recommended processes	1	3	-	-
<b>NOS Total</b>	<b>30</b>	<b>60</b>	<b>-</b>	<b>10</b>
<b>TEL/N9102: Interact Effectively with Team Members and Customers</b>				
<i>Interact effectively with superiors</i>	<b>7</b>	<b>15</b>	-	<b>2</b>
<b>PC1.</b> receive work requirements from superiors and customers and interpret them correctly	1	2	-	-
<b>PC2.</b> inform the supervisor and/or concerned person about any unforeseen disruptions or delays	2	4	-	1
<b>PC3.</b> participate in decision making by providing facts and figures, giving/accepting constructive suggestions	2	5	-	1
<b>PC4.</b> rectify errors as per feedback and ensure the errors are not repeated	2	4	-	-
<i>Interact effectively with colleagues and customers</i>	<b>7</b>	<b>26</b>	-	<b>4</b>
<b>PC5.</b> comply with organisation's policies and procedures for working with team members	1	2	-	-
<b>PC6.</b> communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written	2	4	-	1
<b>PC7.</b> respond to queries and seek/provide clarifications if required	2	4	-	1

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

PC8. co-ordinate with team to integrate work as per requirements	-	3	-	-
PC9. resolve conflicts within the team/with customers to achieve smooth workflow	1	5	-	1
PC10. recognise emotions accurately in self and others to build good relationships	1	4	-	-
PC11. prioritise team and organisation goals above personal goals	-	4	-	1
<i>Respect differences of gender and ability</i>	<b>11</b>	<b>24</b>	-	<b>4</b>
PC12. maintain a conducive environment for all the genders at the workplace	2	5	-	1
PC13. encourage appropriate behavior and conduct with people across gender	2	5	-	1
PC14. assist team members with disability in overcoming any challenges faced in work	3	4	-	1
PC15. practice appropriate verbal and non-verbal communication while interacting with People with Disability (PWD)	2	4	-	1
PC16. ensure equal participation of the people across genders in discussions	2	6	-	-
<b>NOS Total</b>	<b>25</b>	<b>65</b>	<b>-</b>	<b>10</b>

**Outcomes to be assessed/NOSs to be assessed**

**Assessment criteria for the outcome**

Provided in the above section

### Means of assessment 1

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**

**25. EVIDENCE OF LEVEL**

<b>Title/Name of qualification/component:</b> Infrastructure Technician - 5G Networks <b>Level:</b> 4			
<b>NSQF Domain</b>	<b>Outcomes of the Qualification/Component</b>	<b>How the outcomes relates to the NSQF level descriptors</b>	<b>NSQF Level</b>
Process	<ul style="list-style-type: none"> <li>• Installation and configuration 5G NSA network infrastructure</li> <li>• Installation of the relevant equipment for 5G NSA support, such as eNodeB/gNodeB and core</li> <li>• Installation of 5G cell tower antennas, gNodeB and Remote Radio Unit (RRU), 5G core with Service-Based Architecture (SBA)</li> </ul>	<p>The individual is responsible for installing the passive infrastructure equipment at 5G network infrastructure sites to ensure power supply to 5G network and transmission equipment. Hence, this is level 4.</p>	4
Professional knowledge	<p><b>the architecture of an RRU, i.e. high-speed interface unit, signal processing unit, power amplifier, duplexer, extension ports and power module and MR-DC, i.e. Master Node (MN) and Secondary Node (SN)</b></p> <ul style="list-style-type: none"> <li>• Process of installing transceivers, microwave dishes, antennas, and transmission lines</li> <li>• Process of setting up power connection at the site to provide power supply to various cell tower equipment</li> </ul>	<p>The individual should have a good understanding of technical specifications and functionalities of products and processes, knowledge of functioning techniques, knowledge about managing concerns/issues, and standards/guidelines of Infrastructure Technician.  Hence, this is level 4.</p>	4

**NSQF QUALIFICATION FILE**

**Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022**

	<ul style="list-style-type: none"><li>• Process of carrying out RF probing using an RF probe</li><li>• Process of pairing between 5G radios with the cloud-native 5G core network</li><li>• Process of checking and maintaining cell tower and guy anchors</li></ul>		
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## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

Title/Name of qualification/component: Infrastructure Technician - 5G Networks Level: 4			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Professional skill	<p><b>A range of cognitive and practical skills is required to generate solutions to specific problems in a field of work or study.</b></p> <ul style="list-style-type: none"> <li>• Knowledge of conducting site audits to determine if the selected sites meet the applicable requirements for the installation of 5G network infrastructure</li> <li>• Knowledge of 5G infrastructure</li> <li>• Knowledge of recommended methods and techniques as per the organisational procedures for installing, aligning and securing the network equipment</li> <li>• Knowledge of carrying out the after-installation activities and the relevant tools and equipment to be used for the purpose</li> </ul>	<p>The individual is required to have a range of technical skills, to be competitive in this job role, such as strong analytical and problem-solving skills, verbal and written communication skills. comply with standards related to Infrastructure Technician.</p> <p>Hence, this is level 4.</p>	4

## NSQF QUALIFICATION FILE

Approved in 17<sup>th</sup> NSQC Meeting – NCVET-Dated 31 March 2022

Core skill	<b>Core Domain Skill:</b> <ul style="list-style-type: none"><li>• Able to configure 5G NR with the 4G eNodeB, install 5G Radio Frequency (RF) transceivers, 5G Radio System and build 5G Radio Access Network (RAN)</li><li>• Undertaking installation rectification for all equipment deployed during the project rollout</li></ul>	The individual is responsible for installing 5G NSA, 5G SA and ancillary equipment and carrying out preventive and corrective maintenance of the network devices.  Hence, this is level 4.	3
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## NSQF QUALIFICATION FILE

Title/Name of qualification/component: Infrastructure Technician - 5G Networks Level: 4			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Responsibility	<p>Responsibility for completing the work assigned and reporting the same as per standards.</p> <ul style="list-style-type: none"> <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 the workplace</li> <li>• Work along with colleagues and supervisors</li> </ul>	<p>The individual is responsible for carrying out installation and maintenance of 5G network telecommunication equipment on cell tower sites for a telecom service provider, including the 5G Non-standalone (NSA) and Standalone (SA) infrastructure and also responsible for carrying out preventive and corrective maintenance of the network devices.</p> <p>Hence Level 4.</p>	4

## NSQF QUALIFICATION FILE

### **SECTION 3** **EVIDENCE OF NEED**

26	<p><b>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</b></p> <ol style="list-style-type: none"><li>1. Feedback from industry was collected with respect to roles for which qualification pack development was to be prioritized.</li><li>2. Skills Gap analysis reports for industry demand Training duration w.r.t current and potential capacity envisaged for potential supply</li></ol>
27	<p><b>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidence</b></p> <p>We have received the approval form the line ministry.</p>
28	<p><b>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 qualification</b></p> <p>NSDC list of Approved and Under-Development QPs was checked prior to commencement the work.</p>
29	<p><b>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</b></p> <ul style="list-style-type: none"><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><li>• Employer feedback will be sought post-placement</li><li>• A formal review is scheduled by 2025</li></ul>

Please attach most relevant and recent documents giving further information about any of the topics above.

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

**SECTION 4**  
**EVIDENCE OF PROGRESSION**

30 What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

1. Endorsed and accepted by the Industry players
2. Formal recognition from the Industry players
3. Horizontal and vertical mobility options are available

**Annexure 1: Career Map of Infrastructure Technician - 5G Networks**

