

## QUALIFICATION FILE

< Predictive Maintenance Data Acquisition Engineer >

☒ 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: 6

Submitted By:

< Capital Goods and Strategic Skill Council >

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## Section 1: Basic Details

| 1.     | Qualification Name                                                                                                                                                             | Predictive Maintenance Data Acquisition Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------|--------|--------------------------------------------------------------------|-----------------------------------------------------------|---|-----------|--|---|------------|-------------------------------|---|-----------------------|---------------------------------|---|---------------------------|---------------------------------|
| 2.     | Sector/s                                                                                                                                                                       | Capital Goods and Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 3.     | Type of Qualification: <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options<br><input type="checkbox"/> OEM | NQR Code & version of existing/previous qualification: (change to previous, once approved) - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                      | Qualification Name of existing/previous version: V1 |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 4.     | a. OEM Name<br>b. Qualification Name<br>(Wherever applicable)                                                                                                                  | Predictive Maintenance Data Acquisition Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 5.     | National Qualification Register (NQR) Code &Version<br>(Will be issued after NSQC approval)                                                                                    | QG-06-IT-04201-2025-V1-CGSC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6. NCrF/NSQF Level: 6                                                |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 7.     | Award (Certificate/Diploma/Advance Diploma/ Any Other<br>(Wherever applicable specify multiple entry/exits also & provide details in annexure)                                 | Certificate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 8.     | Brief Description of the Qualification                                                                                                                                         | A Predictive Maintenance Data Acquisition Engineer is a professional who focuses on gathering and analyzing data related to the performance of machinery and equipment in Capital Goods industries.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 9.     | Eligibility Criteria for Entry for Student/Trainee/Learner/Employee                                                                                                            | <p>a. Entry Qualification &amp; Relevant Experience:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4 Year UG</td> <td></td> </tr> <tr> <td>2</td> <td>UG Diploma</td> <td>3 Year of relevant experience</td> </tr> <tr> <td>3</td> <td>Previous NSQF Level 5</td> <td>1.5 Year of relevant experience</td> </tr> <tr> <td>4</td> <td>Previous NSQF Level – 5.5</td> <td>1.5 Year of relevant experience</td> </tr> </tbody> </table> <p>b. Age: NA</p> |                                                                      |                                                     | S. No. | Academic/Skill Qualification (with Specialization - if applicable) | Required Experience (with Specialization - if applicable) | 1 | 4 Year UG |  | 2 | UG Diploma | 3 Year of relevant experience | 3 | Previous NSQF Level 5 | 1.5 Year of relevant experience | 4 | Previous NSQF Level – 5.5 | 1.5 Year of relevant experience |
| S. No. | Academic/Skill Qualification (with Specialization - if applicable)                                                                                                             | Required Experience (with Specialization - if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 1      | 4 Year UG                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 2      | UG Diploma                                                                                                                                                                     | 3 Year of relevant experience                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 3      | Previous NSQF Level 5                                                                                                                                                          | 1.5 Year of relevant experience                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 4      | Previous NSQF Level – 5.5                                                                                                                                                      | 1.5 Year of relevant experience                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 10.    | Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))                                                                        | 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11. Common Cost Norm Category (I/II/III)<br>(wherever applicable): I |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |
| 12.    | Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)                                                                                | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                      |                                                     |        |                                                                    |                                                           |   |           |  |   |            |                               |   |                       |                                 |   |                           |                                 |

|     |                                                                                                                                                                              |                                                                                                                                                                                   |                       |                          |                              |                                         |                      |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|------------------------------|-----------------------------------------|----------------------|
| 13. | <b>Training Duration by Modes of Training Delivery</b> ( <i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i> ) | <input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended                                                                      |                       |                          |                              |                                         |                      |
|     |                                                                                                                                                                              | <b>Training Delivery Modes</b>                                                                                                                                                    | <b>Theory (Hours)</b> | <b>Practical (Hours)</b> | <b>OJT Mandatory (Hours)</b> | <b>Viva (Hours)</b>                     | <b>Total (Hours)</b> |
|     |                                                                                                                                                                              | <b>Classroom (offline)</b>                                                                                                                                                        | 184                   | 326                      | 150                          | -                                       | 660                  |
|     |                                                                                                                                                                              | <b>Online</b>                                                                                                                                                                     |                       |                          |                              |                                         |                      |
|     |                                                                                                                                                                              | (Refer Blended Learning Annexure for details)                                                                                                                                     |                       |                          |                              |                                         |                      |
| 14. | <b>Aligned to NCO/ISCO Codes</b> ( <i>if no code is available mention the same</i> )                                                                                         | 2144.0600                                                                                                                                                                         |                       |                          |                              |                                         |                      |
| 15. | <b>Progression path after attaining the qualification</b> ( <i>Please show Professional and Academic progression</i> )                                                       | <ul style="list-style-type: none"> <li>Predictive Maintenance Specialist Level – 7</li> <li>Predictive Maintenance Head Level – 6.5</li> </ul>                                    |                       |                          |                              |                                         |                      |
| 16. | <b>Other Indian languages in which the Qualification &amp; Model Curriculum are being submitted</b>                                                                          | Yes                                                                                                                                                                               |                       |                          |                              |                                         |                      |
| 17. | <b>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</b>                                                                             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   URLs of similar Qualifications:                                                                             |                       |                          |                              |                                         |                      |
| 18. | <b>Is the Job Role Amenable to Persons with Disability</b>                                                                                                                   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If "Yes", specify applicable type of Disability:                                                           |                       |                          |                              |                                         |                      |
| 19. | <b>How Participation of Women will be Encouraged</b>                                                                                                                         | Yes Via College or Industry engagement                                                                                                                                            |                       |                          |                              |                                         |                      |
| 20. | <b>Are Greening/ Environment Sustainability Aspects Covered</b> ( <i>Specify the NOS/Module which covers it</i> )                                                            | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   To be incorporated later                                                                                    |                       |                          |                              |                                         |                      |
| 21. | <b>Is Qualification Suitable to be Offered in Schools/Colleges</b>                                                                                                           | Schools <input type="checkbox"/> Yes <input type="checkbox"/> No   Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                   |                       |                          |                              |                                         |                      |
| 22. | <b>Name and Contact Details of Submitting / Awarding Body SPOC</b><br><i>(In case of CS or MS, provide details of both Lead AB &amp; Supporting ABs)</i>                     | Name: Hitesh<br>Email : <a href="mailto:standards@cgssc.org">standards@cgssc.org</a><br>Website: <a href="http://www.cgssc.org">www.cgssc.org</a><br>Contact No.: +91-78382 93838 |                       |                          |                              |                                         |                      |
| 23. | <b>Final Approval Date by NSQC:</b> 08-05-2025                                                                                                                               | <b>24. Validity Duration:</b> 3 Years                                                                                                                                             |                       |                          |                              | <b>25. Next Review Date:</b> 08-05-2028 |                      |

## 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 Vi-Viva**

| S. No                                    | NOS/Module Name                                                                                                                      | NOS/Module Code & Version (if applicable) | Core/ Non-Core | NCrF/NSQF Level | Credits as per NCrF | Training Duration (Hours) |            |            |          |            | Assessment Marks |            |          |            |            |                               |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------|-----------------|---------------------|---------------------------|------------|------------|----------|------------|------------------|------------|----------|------------|------------|-------------------------------|
|                                          |                                                                                                                                      |                                           |                |                 |                     | Th.                       | Pr.        | OJT-Man.   | OJT-Rec. | Total      | Th.              | Pr.        | Proj.    | Viva       | Total      | Weightage (%) (if applicable) |
| 1.                                       | Bridge Module Design & Implement the Data Acquisition Systems in the Production of equipment, machinery, and other industrial goods. | CSC/N0917: Version No. – 1.0              | Core           | 6               | 3                   | 30                        | 60         | -          | -        | 90         | 40               | 40         | -        | 20         | 100        | 15                            |
| 2.                                       | Analyze & Maintaining the Data Acquisition Systems using Data Acquisition Techniques.                                                | CSC/N0918 Version No. – 1.0               | Core           | 6               | 6                   | 54                        | 66         | 60         |          | 180        | 40               | 40         | -        | 20         | 100        | 20                            |
| 3.                                       | Interpret the Data Acquisition Systems & Integrate Predictive Maintenance Strategies                                                 | CSC/N0919 Version No. – 1.0               | Core           | 6               | 7                   | 36                        | 84         | 90         |          | 210        | 40               | 40         | -        | 20         | 100        | 35                            |
| 4.                                       | Collaboratively coordinate with the team.                                                                                            | CSC/N1339, v1.0                           | Non-Core       | 6               | 3                   | 30                        | 60         | -          |          | 90         | 40               | 40         | -        | 20         | 100        | 10                            |
| 5.                                       | Maintain Health, Safety and Environment at workplace.                                                                                | CSC/N0505, v1.0                           | Non-Core       | 6               | 1                   | 10                        | 20         |            |          | 30         | 40               | 40         | -        | 20         | 100        | 10                            |
| 6.                                       | Employability Skills (60 hours)                                                                                                      | DGT/VSQ/N 0102-NOS Version No. – 1.0      | Non-Core       | 6               | 2                   | 24                        | 36         | -          | -        | 60         | 40               | 40         | -        | 20         | 100        | 10                            |
| <b>Duration (in Hours) / Total Marks</b> |                                                                                                                                      |                                           |                |                 | <b>22</b>           | <b>184</b>                | <b>326</b> | <b>150</b> |          | <b>660</b> | <b>240</b>       | <b>240</b> | <b>-</b> | <b>120</b> | <b>600</b> | <b>100</b>                    |

## Elective NOS/s:

| S. No                             | NOS/Module Name | NOS/Module Code & Version (if applicable) | Core/Non-Core | NCrF/NSQF Level | Credits as per NCrF | Training Duration (Hours) |     |          |          |       | Assessment Marks |     |       |      |       |                               |
|-----------------------------------|-----------------|-------------------------------------------|---------------|-----------------|---------------------|---------------------------|-----|----------|----------|-------|------------------|-----|-------|------|-------|-------------------------------|
|                                   |                 |                                           |               |                 |                     | Th.                       | Pr. | OJT-Man. | OJT-Rec. | Total | Th.              | Pr. | Proj. | Viva | Total | Weightage (%) (if applicable) |
| 1.                                |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |
| 2.                                |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |
| Duration (in Hours) / Total Marks |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |

## Optional NOS/s:

| S. No                             | NOS/Module Name | NOS/Module Code & Version (if applicable) | Core/Non-Core | NCrF/NSQF Level | Credits as per NCrF | Training Duration (Hours) |     |          |          |       | Assessment Marks |     |       |      |       |                               |
|-----------------------------------|-----------------|-------------------------------------------|---------------|-----------------|---------------------|---------------------------|-----|----------|----------|-------|------------------|-----|-------|------|-------|-------------------------------|
|                                   |                 |                                           |               |                 |                     | Th.                       | Pr. | OJT-Man. | OJT-Rec. | Total | Th.              | Pr. | Proj. | Viva | Total | Weightage (%) (if applicable) |
| 1.                                |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |
| 2.                                |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |
| Duration (in Hours) / Total Marks |                 |                                           |               |                 |                     |                           |     |          |          |       |                  |     |       |      |       |                               |

## Assessment - Minimum Qualifying Percentage

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

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

**Minimum Pass Percentage – NOS/Module-wise:** 70 % (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. | <b>Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b> | <p>B.E./B.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 4 years relevant industry experience and 1 year training experience.</p> <p>OR</p> <p>M.E./M.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 3 years relevant industry experience and 1 year training experience.</p> |
|----|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|    |                                                                                                                  |                                                                                                                                                                                                                                                                                                                    |
|----|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | <b>Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b> | B.E./B.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 5 years relevant industry experience and 2 year training experience.<br>Or<br>M.E./M.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 4 years relevant industry experience and 2 year training experience. |
| 3. | <b>Tools and Equipment Required for Training</b>                                                                 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", details to be provided in Annexure)                                                                                                                                                                                                 |
| 4. | <b>In Case of Revised Qualification, Details of Any Upskilling Required for Trainer</b>                          |                                                                                                                                                                                                                                                                                                                    |

## Section 4: Assessment Related

|   |                                                                                                                       |                                                                                                                                                                                                                                                                                                                            |
|---|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>                | B.E./B.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 4 years relevant industry experience and 1 year training experience.<br><br>OR<br><br>M.E./M.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 3 years relevant industry experience and 1 year training experience. |
| 2 | <b>Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b> | B.E./B.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 5 years relevant industry experience and 2 year training experience.<br>Or<br>M.E./M.Tech (Mechanical/Electrical/Electronics/Automobile/Instrumentation) with 4 years relevant industry experience and 2 year training experience.         |
| 3 | <b>Assessment Mode (Specify the assessment mode)</b>                                                                  | <b>Formative, Summative &amp; Skill Assessment</b>                                                                                                                                                                                                                                                                         |
| 4 | <b>Tools and Equipment Required for Assessment</b>                                                                    | <input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> 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. | <b>Latest Skill Gap Study (not older than 2 years) (Yes/No):</b> No                                               |
| 2. | <b>Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):</b> No (Industry driven) |

|    |                                                                                                        |
|----|--------------------------------------------------------------------------------------------------------|
| 3. | <b>Government /Industry initiatives/ requirement (Yes/No):</b> Yes                                     |
| 4. | <b>Number of Industry validation provided:</b> 5                                                       |
| 5. | <b>Estimated nos. of persons to be trained and employed:</b> 96                                        |
| 6. | <b>Evidence of Concurrence/Consultation with Line Ministry/State Departments:</b> Yes<br>If "No", why: |

## Section 6: Annexure &amp; Supporting Documents Check List

Specify Annexure Name / Supporting document file name

|     |                                                                                                                      |              |
|-----|----------------------------------------------------------------------------------------------------------------------|--------------|
| 1.  | <b>Annexure:</b> NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)                      | Q file       |
| 2.  | <b>Annexure:</b> List of tools and equipment relevant for qualification (Mandatory, except in case of online course) | Q file       |
| 3.  | <b>Annexure:</b> Detailed Assessment Criteria (Mandatory)                                                            | Q file       |
| 4.  | <b>Annexure:</b> Assessment Strategy (Mandatory)                                                                     | Q file       |
| 5.  | <b>Annexure:</b> Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")               | Yes Provided |
| 6.  | <b>Annexure:</b> Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)              | Yes Provided |
| 7.  | <b>Annexure:</b> Acronym and Glossary (Optional)                                                                     | Yes Provided |
| 8.  | <b>Supporting Document:</b> Model Curriculum (Mandatory – Public view)                                               | Yes Provided |
| 9.  | <b>Supporting Document:</b> Career Progression (Mandatory - Public view)                                             | Yes Provided |
| 10. | <b>Supporting Document:</b> Occupational Map (Mandatory)                                                             | Yes Provided |
| 11. | <b>Supporting Document:</b> Assessment SOP (Mandatory)                                                               | Yes Provided |
| 12. | <b>Any other document you wish to submit:</b>                                                                        | NA           |

## 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 |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Professional Theoretical Knowledge/Process</b> | Data Acquisition: Design, develop, and implement data acquisition systems to collect and store various types of data from sensors, machines, and other sources. | The role of a Predictive Maintenance Data Acquisition Engineer aligns well with NSQF Level Descriptor 6 by requiring a blend of advanced theoretical knowledge | <b>6</b>        |



|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                                                                             | <p>Data Analysis: Analyze and interpret large datasets to identify trends, patterns, and correlations that can inform predictive maintenance decisions.</p> <p>Machine Learning: Develop and apply machine learning models to predict equipment failures, optimize maintenance schedules, and improve overall maintenance efficiency.</p> <p>Integration: Integrate data from various sources, including sensors, historians, and enterprise systems, to create a comprehensive data architecture.</p> <p>Communication: Collaborate with cross-functional teams, including maintenance, operations, and IT, to ensure effective communication and implementation of predictive maintenance strategies.</p> <p>Troubleshooting: Identify and resolve issues related to data acquisition, analysis, and integration.</p>                                                    | <p>of predictive maintenance methods and technologies, along with practical process-oriented outcomes focused on data acquisition, analysis, and application.</p> <p>This alignment ensures that professionals in this role are equipped to meet complex industry challenges effectively while contributing to the overarching goals of system reliability and operational efficiency.</p>                                                                                                   |          |
| <b>Professional and Technical Skills/ Expertise/ Professional Knowledge</b> | <p>Programming languages: Proficiency in programming languages such as Python, Java, C++, or MATLAB.</p> <p>Data Acquisition Systems: Knowledge of data acquisition systems, including hardware and software components, such as sensors, transducers, and data loggers.</p> <p>Data Analytics: Familiarity with data analytics tools and techniques, including data visualization, statistical modeling, and machine learning algorithms.</p> <p>Industrial Automation: Understanding of industrial automation systems, including control systems, programmable logic controllers (PLCs), and human-machine interfaces (HMIs).</p> <p>Data Management: Knowledge of data management systems, including databases, data warehousing, and data lakes.</p> <p>Networking: Familiarity with networking protocols and technologies, including TCP/IP, Ethernet, and Wi-Fi.</p> | <p>The expected outcomes from a Predictive Maintenance Data Acquisition Engineer aligned with NSQF Level 6 include:</p> <p>Successful design and implementation of predictive maintenance programs leading to reduced equipment downtime and maintenance costs.</p> <p>Effective data interpretation and reporting that informs maintenance decisions and strategies.</p> <p>Contribution to safety improvements and operational efficiency through proactive maintenance methodologies.</p> | <b>6</b> |

|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Employment Readiness &amp; Entrepreneurship</b><br><b>Skills &amp; Mind-set/Professional Skill</b> | <p>Design and develop data acquisition systems for predictive maintenance applications.</p> <p>Collect and analyze data from various sources, such as sensors, SCADA systems, and other data sources.</p> <p>Develop and implement data processing algorithms to extract relevant information from large datasets.</p> <p>Collaborate with cross-functional teams to integrate data acquisition systems with other systems.</p> <p>Ensure data quality and integrity through data validation, cleaning, and transformation.</p> <p>Develop and maintain databases to store and manage large datasets.</p> <p>Provide data-driven insights to maintenance teams to optimize maintenance schedules and reduce downtime.</p>                                                           | <p>Collect and analyze data from various sources to identify patterns and trends.</p> <p>Develop and implement predictive maintenance strategies to reduce downtime and improve equipment performance.</p> <p>Design and develop data acquisition systems and tools to collect and store data for analysis.</p> <p>Communicate complex data insights and findings to stakeholders, including technical and non-technical audiences.</p> <p>Hence NSQF level for this descriptor is 6.</p>                         | <b>6</b> |
| <b>Broad Learning Outcomes/Core Skill</b>                                                             | <p>Data Analytics: Collect, analyze, and interpret large datasets to identify trends, patterns, and correlations.</p> <p>Predictive Maintenance: Apply predictive maintenance techniques to optimize equipment reliability, reduce downtime, and extend lifespan.</p> <p>Data Engineering: Design, implement, and maintain data pipelines, data warehousing, and data visualization systems.</p> <p>Communication: Effectively communicate technical information to both technical and non-technical stakeholders.</p> <p>Problem-Solving: Identify and resolve complex data-related problems using analytical and logical thinking.</p> <p>Collaboration: Work effectively with cross-functional teams to integrate predictive maintenance solutions into existing operations.</p> | <p>A Predictive Maintenance Data Acquisition Engineer operating at NSQF Level 6 would therefore need to exhibit a blend of technical competency, analytical skills, and responsible decision-making, aligning closely with the broad learning outcomes and essential core skills outlined within the NSQF framework.</p> <p>This integration not only enhances individual occupational competence but also contributes to the overall efficiency and reliability of the organization's maintenance functions.</p> | <b>6</b> |
| <b>Responsibility</b>                                                                                 | <p>Data Acquisition: Design, develop, and implement data acquisition systems to collect and integrate various types of data</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>The Predictive Maintenance Data Acquisition Engineer role aligns closely with NSQF Level 6, showcasing advanced</p>                                                                                                                                                                                                                                                                                                                                                                                            | <b>6</b> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <p>from sensors, equipment, and other sources.</p> <p><b>Data Analysis:</b> Analyze and interpret large datasets to identify patterns, trends, and anomalies that can inform predictive maintenance decisions.</p> <p><b>Predictive Maintenance:</b> Develop and implement predictive maintenance models using machine learning algorithms to predict equipment failures and optimize maintenance schedules.</p> <p><b>System Integration:</b> Integrate data acquisition systems with other systems, such as computerized maintenance management systems (CMMS), enterprise resource planning (ERP) systems, and manufacturing execution systems (MES).</p> <p><b>Collaboration:</b> Collaborate with cross-functional teams, including maintenance, operations, and engineering teams to ensure data accuracy and effectiveness.</p> <p><b>Data Visualization:</b> Develop data visualization tools to present complex data insights to stakeholders in a clear and concise manner.</p> | <p>responsibilities that require specialized knowledge and a proactive approach to problem-solving.</p> <p>As described, the outcomes of this role are integral to enhancing operational efficiency through effective maintenance strategies, underscoring the importance of responsibility and skill at this level. As such, it positions individuals to not only fulfill their job functions with a high degree of expertise but also to contribute to overall organizational goals.</p> |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

## Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

**Batch Size:** 20-25 Nos

| S. No. | Tool / Equipment Name     | Specification | Quantity for specified Batch size |
|--------|---------------------------|---------------|-----------------------------------|
| 1      | Chairs/Tables             | As standard   | 25                                |
| 2      | Computer with internet    | As standard   | 25                                |
| 3      | LCD projector with screen | As standard   | 1                                 |

|    |                                       |                                                                                                                                                                                                                                  |         |
|----|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 4  | Trainer chair and Table               | As standard                                                                                                                                                                                                                      | 1       |
| 5  | Demonstration table pin up boards     | As standard                                                                                                                                                                                                                      | 1       |
| 6  | White board with marker               | As standard                                                                                                                                                                                                                      | 1       |
| 7  | Sensors and Monitoring Devices:       | Vibration sensors<br>Temperature sensors<br>Pressure sensors<br>Flow meters<br>Accelerometers<br>Thermocouples<br>Proximity probes                                                                                               | 02 Each |
| 8  | Data Acquisition Systems              | Data loggers<br>Programmable logic controllers (PLCs)<br>SCADA (Supervisory Control and Data Acquisition) systems<br>Data acquisition cards/interfaces for PCs                                                                   | 02 Each |
| 9  | Condition Monitoring Equipment        | Vibration analyzers<br>Infrared thermography cameras<br>Ultrasound detectors<br>Oil analysis kits<br>Motor current analysis tools                                                                                                | 02 Each |
| 10 | Diagnostic Tools                      | Spectrum analyzers<br>FFT (Fast Fourier Transform) analyzers<br>Time waveform analyzers<br>Trend analysis software                                                                                                               | 02 Each |
| 11 | Data Processing and Analysis Software | Data management software (e.g., databases, data warehouses)<br>Statistical analysis software (e.g., MATLAB, R)<br>Machine learning and predictive analytics tools (e.g., Python with libraries like Pandas, NumPy, scikit-learn) | 02 Each |
| 12 | Fire Extinguisher                     | As standard                                                                                                                                                                                                                      | 1       |
| 13 | Safety Gloves(Rubber)                 | As standard                                                                                                                                                                                                                      | 25      |
| 14 | Ear Plugs                             | As standard                                                                                                                                                                                                                      | 25      |
| 15 | Safety Shoes & Helmet                 | As standard                                                                                                                                                                                                                      | 25      |
| 16 | Goggles                               | As standard                                                                                                                                                                                                                      | 25      |
| 17 | First-Aid Kit                         | As standard                                                                                                                                                                                                                      | 2       |

**Classroom Aids**

The aids required to conduct sessions in the classroom are:

1. Computer / Laptop
2. Whiteboard and marker
3. Projector

**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     | Broadline Computer Systems  | Prabhakaran         | Manager R&D      | No7, 2 <sup>nd</sup> Floor Khader Nawaz Khan Road, Nungambakkam, Chennai | 044 28333083     | contact@broadline.co.in |                                 |
| 2     | Jain Laboratory Instruments | Ravi Jain           | Director         | 449, HSIIDC, Industrial Area Saha, Haryana                               | 8569909696       | sales@jlabexport.com    |                                 |
| 3     | Marathwada Autocluster      | Sudarshan Dhavurkar | Center In charge | P-174, MIDC Waluj                                                        | 8237272802       | macluster@gmail.com     |                                 |
| 4     | Mindbridge Innovations      | Aruna Anchal        | General Manager  | New Delhi                                                                |                  |                         |                                 |
| 5     | TANSAM                      | Sukhpreet Singh     | CEO              | 6 <sup>th</sup> floor, Tidel Park, Chennai                               | 4469255700       | info@tansam.org         |                                 |

**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 |
| 2025-26 | 96                   | 85                                 | 32                   | 19                                 | 5                      | 3                                  |
| 2026-27 | 96                   | 83                                 | 35                   | 22                                 | 8                      | 5                                  |
| 2027-28 | 96                   | 87                                 | 42                   | 28                                 | 11                     | 6                                  |

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:**

Hindi

English

Annexure: Blended Learning

**Blended Learning Estimated Ratio & Recommended Tools:**

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

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

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

[CSC/N0917: Design & Implement the Data Acquisition Systems in the Production of equipment, machinery, and other industrial goods.](#)

| Assessment Criteria for Outcomes                                                                                                   | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Select the Components to design Data Acquisition System as per requirement.</i>                                                 | 10           | 10              | -             | 6          |
| PC1. evaluate requirements of the Data Acquisition System.                                                                         | 3            | 2               | -             | 2          |
| PC2. identify the devices and Components to be connected in the Data Acquisition System.                                           | 3            | 4               | -             | 2          |
| PC3. identify appropriate technology, devices, and deployment model to best meet the overall needs of the Data Acquisition System. | 4            | 4               | -             | 2          |
| <i>Integrate the Components using Data Acquisition Techniques</i>                                                                  | 15           | 15              | -             | 10         |
| PC4. apply appropriate wired/wireless connectivity protocols for Software & Hardware in the Production Process.                    | 3            | 3               | -             | 2          |
| PC5. evaluate impacts of Data Acquisition System on the environment and on human health.                                           | 3            | 3               | -             | 2          |
| PC6. ensure network supports bulk configuration functionalities across multiple solution.                                          | 3            | 3               | -             | 2          |
| PC7. design fallback mechanisms in case of system disruptions and outages                                                          | 3            | 3               | -             | 2          |
| Assessment Criteria for Outcomes                                                                                                   | Theory Marks | Practical Marks | Project Marks | Viva Marks |
| PC8. turn on the power of Data Acquisition system in the network and look for healthy communication between them.                  | 3            | 3               | -             | 2          |
| Test & Validate the Data Acquisition System                                                                                        | 15           | 15              | -             | 4          |
| PC9. Prepare test data that simulates real-world scenarios and covers the entire range of operating conditions of the System.      | 5            | 4               | -             | 2          |
| PC10. Run the test cases defined in the test plan and collect data from the sensors and equipment being monitored.                 | 5            | 6               | -             | 1          |

|                                                                                                                                                     |    |    |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---|----|
| PC11. Verify that the system meets the acceptance criteria defined in the test plan, such as reliability, accuracy, response time, and scalability. | 5  | 5  | - | 1  |
| NOS Total                                                                                                                                           | 40 | 40 | - | 20 |

**CSC/N0918: Analyze & Maintaining the Data Acquisition Systems using Data Acquisition Techniques.**

| Assessment Criteria for Outcomes                                                                                                                                                                       | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Analyze the Data for Reliability As per Test Plan</i>                                                                                                                                               | 10           | 10              | -             | 6          |
| <b>PC1.</b> Create a data analysis plan that outlines the objectives, scope, data sources, data preparation steps, analysis techniques, and reporting requirements.                                    | 3            | 2               | -             | 2          |
| <b>PC2.</b> Perform exploratory data analysis to gain insights into the data's distribution, correlations, and patterns. This may involve creating histograms, scatter plots, and correlation matrices | 3            | 4               | -             | 2          |
| <b>PC3.</b> Develop new features or variables from the raw data to improve the accuracy and reliability of predictive models.                                                                          | 4            | 4               | -             | 2          |
| <i>Verify the Data Acquisition System for Accurate Prediction</i>                                                                                                                                      | 15           | 15              | -             | 10         |
| PC4. Run the test cases defined in the test plan, and collect data from the sensors and equipment being monitored.                                                                                     | 3            | 3               | -             | 2          |
| PC5. Analyze the data collected during testing to verify that the system can accurately predict equipment failures.                                                                                    | 3            | 3               | -             | 2          |
| PC6. Verify that the system meets the acceptance criteria defined in the test plan, such as reliability, accuracy, response time, and scalability.                                                     | 3            | 3               | -             | 2          |
| PC7. Document the test results, including any issues or defects found during testing, and provide recommendations for improving the system's performance.                                              | 3            | 3               | -             | 2          |



| Assessment Criteria for Outcomes                                                                                                                                                                                                     | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| PC8. Review the test results with stakeholders and obtain their approval before deploying the system in production.                                                                                                                  | 3            | 3               | -             | 2          |
| Support in maintenance of Data Acquisition System                                                                                                                                                                                    | 15           | 15              | -             | 4          |
| PC9. Create a maintenance plan that outlines the system's maintenance requirements, including regular maintenance tasks, preventive maintenance procedures, and corrective maintenance actions.                                      | 5            | 5               | -             | 2          |
| PC10. Establish standard maintenance procedures that cover tasks such as calibration of sensors, cleaning of equipment, replacement of faulty components, and software updates.                                                      | 5            | 5               | -             | 1          |
| PC11. Implement data quality control measures, such as data cleansing procedures, data validation procedures, and data governance policies, to ensure that the data being fed into the system is accurate, reliable, and up-to-date. | 5            | 5               | -             | 1          |
| NOS Total                                                                                                                                                                                                                            | 40           | 40              | -             | 20         |

**CSC/N0919: Interpret the Data Acquisition Systems & Integrate Predictive Maintenance Strategies.**

| Assessment Criteria for Outcomes                                                           | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Validate the Predictive Model of Data Acquisition System</i>                            | 10           | 10              | -             | 7          |
| PC1. Define the Predictive Model Objective with reference to Model Strategy.               | 3            | 3               | -             | 2          |
| PC2. Select the Test Set to ensure it continues to meet the desired performance threshold. | 3            | 3               | -             | 2          |
| PC3. Evaluate the Predictive Model Performance based on Reliability.                       | 4            | 4               | -             | 3          |
| <i>Develop the Predictive Maintenance Strategies to forecast future asset behavior.</i>    | 15           | 15              | -             | 9          |

|                                                                                                                                                                     |                     |                        |                      |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|----------------------|-------------------|
| PC4. define the asset and maintenance objectives based on Strategy.                                                                                                 | 5                   | 5                      | -                    | 3                 |
| PC5. Analyze the data using statistical methods and machine learning algorithms to identify patterns and trends that can be used to forecast future asset behavior. | 5                   | 5                      | -                    | 3                 |
| PC6. coordinate with Supervisor to rectify any errors which are generated during the Execution of Maintenance Strategies.                                           | 5                   | 5                      | -                    | 3                 |
|                                                                                                                                                                     | <b>Theory Marks</b> | <b>Practical Marks</b> | <b>Project Marks</b> | <b>Viva Marks</b> |
| Assessment Criteria for Outcomes                                                                                                                                    |                     |                        |                      |                   |
| Monitor & Optimize the Predictive Maintenance Strategies                                                                                                            | <b>15</b>           | <b>15</b>              | -                    | <b>4</b>          |
| PC7. Monitor, collecting and analyzing data, updating the predictive models, and refining the maintenance activities.                                               | <b>5</b>            | <b>5</b>               | -                    | <b>2</b>          |
| PC8. evaluate regularly to ensure it is meeting the desired objectives and delivering the expected benefits.                                                        | <b>5</b>            | <b>5</b>               | -                    | <b>1</b>          |
| PC9. maintain records of Predictive maintenance activities done on Production Process as per Data Acquisition Strategies.                                           | <b>5</b>            | <b>5</b>               | -                    | <b>1</b>          |
| NOS Total                                                                                                                                                           | <b>40</b>           | <b>40</b>              | -                    | <b>20</b>         |

**Assessment Parameters:**

## Assessment Plan:

## 1. Components of Assessment:

- Each subject will be assessed in three components: Theory (40% weightage), Practical (40% weightage), and On-job Training (OJT, 20% weightage).

## 2. Passing Parameters:

- To pass the semester, students must meet both the assessment parameters given below.

## Parameter 1 - Weighted Semester Score:

- Students must achieve a minimum of 60% in the weighted average score across all three components (Theory, Practical, and OJT) for each subject.

## Parameter 2 - Individual Component Score:

- Students need to score at least 40% in each individual component (Theory, Practical, and OJT) of every subject.

### Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

*Mention the detailed assessment strategy in the provided template.*

#### <1. Assessment System Overview:

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

#### 2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

#### 3. Assessment Quality Assurance levels/Framework:

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

#### 4. Types of evidence or evidence-gathering protocol:

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

#### 5. Method of verification or validation:

- Surprise visit to the assessment location

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

- Hard copies of the documents are stored

#### On the Job:

1. Each module (which covers the job profile of Predictive Maintenance Data Acquisition Engineer) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
  - Videos of Trainees during OJT
4. Assessment of each Module will ensure that the candidate is able to:
  - Effective engagement with the customers
  - Understand the working of various tools and equipment

## Annexure: Acronym and Glossary

## Acronym

| Acronym | Description                                          |
|---------|------------------------------------------------------|
| AA      | Assessment Agency                                    |
| AB      | Awarding Body                                        |
| ISCO    | International Standard Classification of Occupations |
| NCO     | National Classification of Occupations               |
| NCrF    | National Credit Framework                            |
| NOS     | National Occupational Standard(s)                    |
| NQR     | National Qualification Register                      |
| NSQF    | National Skills Qualifications Framework             |
| OJT     | On the Job Training                                  |

## Glossary

| Term                                         | Description                                                                                                                                                                                                                            |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>National Occupational Standards (NOS)</b> | 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.                                               |
| <b>Qualification</b>                         | 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                                                       |
| <b>Qualification File</b>                    | 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. |
| <b>Sector</b>                                | A grouping of professional activities on the basis of their main economic function, product, service or technology.                                                                                                                    |
| <b>Long Term Training</b>                    | Long-term skilling means any vocational training program undertaken for a year and above.<br><a href="https://ncvet.gov.in/sites/default/files/NCVET.pdf">https://ncvet.gov.in/sites/default/files/NCVET.pdf</a>                       |