



# **COMPETENCY STANDARD**

## **MOBILE PHONE SERVICING**

**Level: 3**

**(Light Engineering Sector)**

**Competency Standard Code: CS-LE-MPS-L3-EN-V1**



**National Skills Development Authority  
Prime Minister's Office  
Government of the People's Republic of Bangladesh**



## Copyright

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This Competency Standard for **Mobile Phone Servicing** occupation is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been developed by NSDA in association with **Light Engineering Sector**, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

## Introduction

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The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skills ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. " **Mobile Phone Servicing** " is selected as one of the priority occupations of **Light Engineering Sector**. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills Training. Trainees who successfully pass the assessment will receive a qualification in the National Skills Qualification Framework (NSQF) under Bangladesh National Qualification Framework and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

## Overview

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A competency standard is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in **Light Engineering Sector**.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guides

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

## Competency Standards for National Skill Certificate, Level-03 in Mobile Phone Servicing of Light Engineering Sector

### Level Descriptors of NSQF (BNQF 1-6)

Level & Job classification	Knowledge Domain	Skills Domain	Responsibility Domain
6-Mid-Level Manager/ Sub Assistant Engineer	Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyse, compare, relate and evaluate.	Specialised and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.	Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.
5-Supervisor	Broad knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.	Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.	Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management.
4-Highly Skilled Worker	Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements.	Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.
3-Skilled Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace requirements.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace	Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.
2-Semi Skilled Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and instructions.	Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.	Work or study under supervision in a structured context with limited scope of manipulation
1 –Basic Skilled Worker	Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.	Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/ under supervision.	Work under direct supervision in a structured context with limited range of responsibilities.



## List of Abbreviations

<b>General</b>	
NSDA	National Skills Development Authority
BMET	Bureau of Manpower Employment and Training
ILO	International Labor Organization
ISC	Industry Skills Council
NPVC	National Pre-Vocation Certificate
NSQF	National Skills Qualifications Framework
PPP	Public Private Partnership
SCVC	Standards and Curriculum Validation Committee
SEIP	Skills for Employment Investment Program
STP	Skills Training Provider
UoC	Unit of Competency
<b>Occupation Specific</b>	
BGA	Ball Grid Array
DC	Direct current
EMI	Electro-magnetic interference
ESD	Electro-static discharge
IC	Integrated circuit
IT	Information technology
KPI	Key performance indicator
LCD	Liquid Crystal Display
OHS	Occupational health and safety
PPE	Personal protective equipment
RAM	Random Access Memory
RF	Radio frequency
SMD	Surface mounted device
USB	Universal serial bus



Approved by

9<sup>th</sup> Executive Committee (EC) Meeting of NSDA

Held on 16<sup>th</sup> June 2022

Deputy Director (Admin)

and

Officer of Secretarial Duties for EC meeting  
National Skills Development Authority



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**Course Structure**  
**For**  
**NATIONAL CERTIFICATE IN MOBILE PHONE SERVICING**  
**(BNQF, LEVEL- 3)**

Sl. No.	Unit Code and Title		UoC Level	Nominal Duration (Hours)
Generic (2 UoCs required)				20
1	GU-06-L3-V1	Carry out workplace interaction in English	3	20
Sector Specific (4 UoCs required)				
Occupation Specific – Compulsory (5 UoCs required)				270
2	OU-MPS-01-L3-V1	Interact with customer and perform front end repairs	3	20
3	OU-MPS-02-L3-V1	Repair and rework with display module refurbishing	3	60
4	OU-MPS-03-L3-V1	Fault finding, troubleshooting and repair of mobile phone	3	90
5	OU-MPS-04-L3-V1	Re-balling and replacing BGA ICs	3	60
6	OU-MPS-05-L3-V1	Install drivers, update firmware and unlock mobile phone.	3	40
Total Nominal Learning Hours				290

### Units & Elements at a Glance:

#### Generic Competencies (20 Hours)

Code	Unit of Competency	Elements of Competency	Duration (Hours)
GU-06-L3-V1	Carry out workplace interaction in English	<ol style="list-style-type: none"> <li>1. Interpret workplace communication and etiquette</li> <li>2. Read and understand workplace documents</li> <li>3. Participate in workplace meetings and discussions</li> <li>4. Practice professional ethics at work</li> </ol>	20
<b>Total Hour</b>			<b>20</b>

#### Sector Specific Competencies (00 Hours)

#### Occupation Specific Competencies (270 Hours)

Code	Unit of Competency	Elements of Competency	Hours
OU-MPS-01-L3-V1	Interact with customer and perform front end repairs	<ol style="list-style-type: none"> <li>1. Communicate with customer</li> <li>2. Receive mobile phone for repair and service</li> <li>3. Deliver mobile phone and update record</li> </ol>	20
OU-MPS-02-L3-V1	Repair and rework with display module refurbishing	<ol style="list-style-type: none"> <li>1. Prepare for dis-assemble mobile phone</li> <li>2. Identify the problem of display module</li> <li>3. Repair and rework display module</li> <li>4. Re-assemble the mobile phone</li> <li>5. Clean and store the tools and materials and clean the workplace</li> </ol>	60
OU-MPS-03-L3-V1	Fault finding, troubleshooting and repair of Mobile phone	<ol style="list-style-type: none"> <li>1. Prepare for servicing and maintenance works</li> <li>2. Disassemble mobile phone</li> <li>3. Troubleshoot of Different issues of Mobile phone</li> <li>4. Re-assemble the mobile phone</li> <li>5. Clean and store the tools and materials</li> </ol>	90
OU-MPS-04-L3-V1	Re-balling and replacing BGA ICs	<ol style="list-style-type: none"> <li>1. Prepare for servicing and maintenance works</li> <li>2. Perform re-balling and replacing BGA (Ball Grid Array) ICs</li> <li>3. Clean and store the tools and materials</li> </ol>	60
OU-MPS-05-L3-V1	Install drivers, update firmware and unlock mobile phone.	<ol style="list-style-type: none"> <li>1. Prepare for task to be undertaken</li> <li>2. Download firmware &amp; drivers</li> <li>3. Install drivers &amp; Upgrade firmware</li> <li>4. Perform Unlocking</li> </ol>	40
<b>Total Hours</b>			<b>270</b>

## Generic Competencies

<b>Unit Title</b>	<b>Carry out workplace interaction in English</b>
<b>Unit Code</b>	<b>GU-06-L3-V1</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to carry out workplace interaction in English. It specifically includes the tasks of interpreting workplace communication and etiquette, workplace documents, participating in workplace meetings and discussions, and professional ethics at work.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>bold and underlined</u></b> terms are elaborated in the Range of Variables
1. Interpret workplace communication and etiquette	1.1 Workplace codes of conduct are interpreted as per organisational guidelines. 1.2 Appropriate lines of communication are maintained with supervisors and colleagues. 1.3 Workplace interactions are conducted in a <b><u>courteous manner</u></b> to gather and convey information. 1.4 <b><u>Workplace procedures and matters</u></b> are comprehended.
2. Interpret workplace documents	2.1 Workplace documents are interpreted correctly. 2.2 Visual information/symbols/signage are understood correctly and followed. 2.3 Specific and relevant information are accessed from <b><u>appropriate sources</u></b> . 1.5 Appropriate medium is used to transfer information and ideas.
3. Participate in workplace meetings and discussions	3.1 Team meetings are attended on time. 3.2 Meeting procedures and etiquette are followed. 3.3 Active participation is ensured, opinions are expressed and heard. 2.4 Inputs are provided and interpreted in line with the meeting purpose.
4. Practice professional ethics at work	4.1. Responsibilities as a team member are performed. 4.2. Tasks are performed in accordance with workplace procedures. 4.3. Confidentiality is maintained. 4.4. Inappropriate and conflicting situations are avoided.
<b>Range of Variables</b>	

<b>Variable</b>	<b>Range (May include but not limited to)</b>
1. Courteous manner	1.1 Effective questioning 1.2 Active listening 1.3 Speaking skills 1.4 Writing skill 1.5 Email etiquette
2. Workplace procedures and matters	2.1 Notes 2.2 Arranging a meeting 2.3 Agenda 2.4 Simple reports such as progress and incident reports 2.5 Job sheets 2.6 Operational manuals 2.7 Brochures and promotional material 2.8 Visual and graphic materials 2.9 Standards 2.10 OHS information 2.11 Signs
3. Appropriate sources	3.1 Human Resources (HR) Department 3.2 Managers 3.3 Supervisors 3.4 Management Information System (MIS)
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Interpreted workplace communication and etiquette; 1.2 Interpreted workplace documents; 1.3 Performed active participation in workplace meetings; 1.4 Practiced professional ethics at work;
2. Underpinning knowledge	Trainee will acquire knowledge of: 2.1 Workplace communication and etiquette 2.2 Workplace documents, signs and symbols 2.3 Meeting procedure and etiquette 2.4 Professional ethics

3. Underpinning skill	3.1 Demonstrating workplace communication and etiquette 3.2 Interpreting workplace instructions and symbols 3.3 Demonstrating active participation in workplace meeting 3.4 Applying professional ethics at work
4. Required attitude	4.1 Prompt in carrying out activities 4.2 Tidy and punctual 4.3 Respectful of peers, subordinates and seniors in the workplace 4.4 Concerned about the work environment 4.5 Sincere and honest concerning duties
5. Resource implication	The following resources must be provided: 5.1 Workplace (simulated or actual) 5.2 Workplace procedures 5.3 Standard operating procedure 5.4 Workplace documents, signs and symbols 5.5 Codes of conduct 5.6 Projector 5.7 Stationary 5.8 Learning manual
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module 7.2 Assessment should be done by a NSDA certified/nominated assessor
<b>Accreditation Requirements</b> Training Providers must be accredited by NSDA, the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

## **Sector Specific Competencies**

## **Occupation Specific Competencies**

<b>Unit Title</b>	<b>Interact with Customers and Perform Front End Repairs</b>
<b>Unit Code</b>	<b>OU-MPS-01-L3-V1</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to interact with customers and perform front end repairs. It specifically includes the tasks of communicating with customer; receiving mobile phone for repair and service; and delivering mobile phone and update record.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables
1. Communicate with customer	1.1 Customers are received and greeted as per workplace norms; 1.2 <b><u>Behavioral etiquette</u></b> is followed while interacting with customers; 1.3 Profile of the customer is understood and offered service; 1.4 Customers are interacted and assessed the <b><u>faults</u></b> ; 1.5 Preliminary inspections are carried out; 1.6 Decisions on repair / service is performed;
2. Receive mobile phone for repair and service	2.1 Customers are informed about the <b><u>level of repair</u></b> ; 2.2 Customers are informed approximate repair and servicing cost considering warranty period; 2.3 Customers are informed about securing personal information; 2.4 Phone accessories (SIM and Memory Chips) are handed over the customer; 2.5 Receipt is provided to customer for collection of mobile phones;
3. Deliver mobile phone and update record	3.1 Customers are informed after repair and servicing; 3.2 Mobile phone is handed over to customer; 3.3 Repair and servicing <b><u>records</u></b> are updated as per workplace standards;
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range (May include but not limited to)</b>
1. Behavioral etiquette	1.1 Have mutual respect 1.2 Follow the workplace dress code 1.3 Maintain workplace decorum 1.4 Stay away from gossip 1.5 Always be punctual 1.6 Be a rational person

2. Faults	2.1 Charging Issue (Not charging / Fake charging/Charing port) 2.2 Battery charge auto drain 2.3 Network Issue (No service / Weak signal / Searching) 2.4 Audio problem (Microphone / Speaker / Receiver) 2.5 Vibrator problem 2.6 Sensor Issue 2.7 Display Issue (Broken LCD/ Touch /No display/ Backlight problem) 2.8 Power Issue (No power / Sudden power off/ auto restart) 2.9 Hanging problem 2.10 Stuck on Logo / Boot loop 2.11 Connectivity issue (Bluetooth/Wi-Fi/NFC/GPS/Infrared) 2.12 Insert SIM (No SIM Card inserted shows on the screen) 2.13 Button/Side key Issue (Home / power / volume / silent) 2.14 Software problem (Firmware update / restore / unlock / repair) 2.15 Water damage 2.16 Physical damage
3. Hardware level repair	3.1 Repair Level – 1 (Software update, settings, accessories replace) 3.2 Repair Level – 2 (Cleaning, resoldering, Microphone, Speaker, Receiver, Housing, minor spare parts replace) 3.3 Repair Level – 3 (Major parts / components replace such as - Display, motherboard, PCBA, IO Connector, charging connector, USB connector) 3.4 Repair Level – 4 (IC replace)
4. Records	4.1 Receive and delivery 4.2 Work status 4.3 Customer information 4.4 Characteristics of problems 4.5 Required components 4.6 Service category
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	

1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Received and greeted customers as per company norms</li> <li>1.2 Followed behavioural etiquette</li> <li>1.3 Interacted and assessed faults</li> <li>1.4 Received mobile phone for repair and servicing</li> <li>1.5 Delivered mobile after repair and servicing</li> </ul>
2. Underpinning knowledge	<p>Trainee will acquire knowledge of:</p> <ul style="list-style-type: none"> <li>2.1 Company norms of receive and greet customers</li> <li>2.2 Behavioral etiquette</li> <li>2.3 Recognize customer profile</li> <li>2.4 Hardware level repair</li> </ul>
3. Underpinning skill	<ul style="list-style-type: none"> <li>3.1 Carrying out preliminary inspection</li> <li>3.2 Assessing faults</li> <li>3.3 Interacting with customers about hardware level repair</li> <li>3.4 Estimating cost</li> <li>3.5 Receiving mobile phone for repair and service</li> <li>3.6 Making decision</li> <li>3.7 Providing receipt to customer</li> <li>3.8 Hand over mobile phone after repair and servicing</li> <li>3.9 Updating records of repair and servicing</li> </ul>
4. Required attitude	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Promptness in carrying out activities</li> <li>4.3 Sincere and honest to duties</li> <li>4.4 Environmental concerns</li> <li>4.5 Eagerness to learn</li> <li>4.6 Tidiness and timeliness</li> <li>4.7 Respect for rights of peers and seniors in workplace</li> <li>4.8 Communication with peers and seniors in workplace</li> </ul>
5. Resource implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1 Workplace (actual or simulated)</li> <li>5.2 Mobile phone</li> <li>5.3 Service manual</li> <li>5.4 Variety of Information</li> <li>5.5 Communication tools</li> <li>5.6 Simulated workplace</li> </ul>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <ul style="list-style-type: none"> <li>6.1 Written test</li> <li>6.2 Demonstration</li> <li>6.3 Oral questioning</li> <li>6.4 Portfolio</li> </ul>

7. Context of assessment	<p>7.1 Competency assessment must be done in a training institute or an actual or simulated workplace after completion of this unit of competency.</p> <p>7.2 Assessment should be done by a NSDA certified/nominated assessor</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Title</b>	<b>Repair and Rework with Display Module Refurbishing</b>
<b>Unit Code</b>	<b>OU-MPS-02-L3-V1</b>
<b>Nominal Hours</b>	<b>60 Hours</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to repair and rework with display module refurbishing. It specifically includes the tasks of preparing for disassemble mobile phone, identifying the problem of display module, repairing and reworking display module and reassembling the mobile phone.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables
1. Prepare for dis-assemble mobile phone	1.1 PPE is used 1.2 Workplace is prepared as per standard operating procedure. 1.3 Work instructions are obtained and clarified based on client requirements. 1.4 Responsible person is consulted for effective and proper work coordination. 1.5 <b><u>Tools and equipment</u></b> are prepared and checked in accordance with job requirement. 1.6 Mobile phone is dis-assembled as per standard;
2. Identify the problem of display module	2.1 Display module is visually inspected 2.2 Working performance of touch panel is checked; 2.3 Backlight paper is checked; 2.4 <b><u>Display module problems</u></b> are identified;
3. Repair and rework display module	3.1 Tools and equipment are prepared for repair and rework accordance with job requirement; 3.2 Required <b><u>materials</u></b> are selected and collected as per job requirement; 3.3 Frame is separated from display module as per standard; 3.4 Glass is separated from display module as per standard; 3.5 Backlight paper is separated from display module as per standard if necessary; 3.6 <b><u>Display module</u></b> is cleaned as per standard 3.7 Display is laminated with new glass, touch, OCA (Optically clear adhesives), polarized paper and frame as per standard if necessary 3.8 Repair and rework are performed as per standard;

4. Re-assemble the mobile phone	4.1 Mobile phone is re-assembled as per service manual. 4.2 SIM card, Memory cards are re-assembled as per service manual 4.3 Performance and finishing are checked after re-assemble.
5. Clean and store the tools and materials	5.1 Tools and materials are cleaned and stored. 5.2 The workplace is cleaned as per workplace standard
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range (May include but not limited to)</b>
1. Tools and equipment	1.1 Glass separator machine 1.2 OCA Laminating machine 1.3 Bubble remover machine 1.4 Vacuum machine 1.5 Compressor machine 1.6 Hand grinder 1.7 Low temperature refrigerator 1.8 UV light 1.9 Opener 1.10 Glue remover motor 1.11 Point cutter 1.12 Blade cutter 1.13 Nose cutter 1.14 Precision screw drivers 1.15 Tweezer 1.16 Brush 1.17 Flexible plastic paper / X-ray paper 1.18 Jig and fixture 1.19 Hot air gun 1.20 Display mold 1.21 Glass plug 1.22 Storage Box

2. Materials	2.1 Glass / Touch screen 2.2 Display Frame 2.3 UV Glue 2.4 OCA Paper 2.5 Polarized paper 2.6 Backlight paper 2.7 Glue cutting wire 2.8 Thermal tape 2.9 Anti-adhesive liquid (ISO-Propyl) 2.10 Adhesive 2.11 Clean rom
3. Display module problems	3.1 Glass broken 3.2 Touch not working 3.3 Backlight paper is partially or fully damaged
4. Display Module	4.1. TFT (Thin Film Transistor) LCD 4.2. LED (Light Emitting Diode) LCD 4.3. IPS (In-Place Switching)-LCD 4.4. AMOLED (Active-Matrix Organic Light Emitting Diode) 4.5. Super AMOLED 4.6. OLED (Organic Light Emitting Diode)
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Identified mobile phone cover lock; 1.2 Identified the problem of display module; 1.3 Repaired and reworked display module;
2. Underpinning knowledge	Trainee will acquire knowledge of: 2.1 Problems of display module; 2.2 Repair and rework display module;
3. Underpinning skill	3.1 Collecting specialized tools 3.2 Identifying mobile phone cover lock 3.3 Identifying problem of display module; 3.4 Repairing and reworking display module; 3.5 Reworking with display module

4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere to honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource implication	The following resources must be provided: 5.1 Workplace (actual or simulated) 5.2 Disassembling and reassembling tools 5.3 Special tools 5.4 Mobile phone 5.5 Service manual
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after Completion of the training module. 7.2 Assessment should be done by a NSDA certified/nominated assessor
<b>Accreditation Requirements</b> Training Providers must be accredited by NSDA, the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA	

<b>Unit Title</b>	<b>Fault finding, troubleshooting and repair of Mobile phone</b>
<b>Unit Code</b>	<b>OU-MPS-03-L3-V1</b>
<b>Nominal Hours</b>	<b>90 Hours</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to fault finding, troubleshooting and repair of mobile phone. It specifically includes the tasks preparing for servicing and maintenance works, disassembling mobile phone, troubleshooting of issues and symptoms and reassembling the mobile phone
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables
1. Prepare for servicing and maintenance works	1.1 <b><u>Personal protective equipment (PPE)</u></b> is used and OSH is followed; 1.2 Work instructions are interpreted to determine job requirements; 1.3 <b><u>Tools and equipment</u></b> are selected in accordance with job requirements; 1.4 Workplace is prepared for servicing activities; 1.5 Repairing instruments are calibrated as per work requirement; 1.6 <b><u>Materials</u></b> are selected as per job requirement;
2. Disassemble mobile phone following service manual procedures	2.1 Disassembling system is observed 2.2 Screws, lock position and FPC (Flexible Printed Circuit) Connections (If Applicable) in mobile phone is identified. 2.3 Front and rear parts of mobile phone is identified where adhesive is used 2.4 Location of battery, SIM and memory card are identified and removed by following procedure 2.5 Front and rear part of mobile phone is separated one by one 2.6 Mobile phone PCBA (Printed Circuit Board Assembly) is unscrewed 2.7 Particular screws are placed in particular position 2.8 Connected flex are disconnect from PCBA 2.9 PCBA is disconnected from housing 2.10 <b><u>All accessories</u></b> are disconnected 2.11 Display is disconnected as per standard 2.12 <b><u>All components</u></b> are kept in sequential order;

3. Troubleshoot of issues and symptoms	3.1 <b>Symptoms</b> are checked 3.2 <b>All Issues</b> are identified as per procedure 3.3 Identified specific root cause of problems 3.4 Fix the problem
4. Reassemble the mobile phone	4.1 Reassembled mobile phone as per service manual. 4.2 Front cover and back cover are re-assembled. 4.3 SIM card, Memory cards are re-assembled as per service manual 4.4 Performance and finishing are checked after reassemble.
5. Clean and store the tools and materials	5.1 Tools and materials are cleaned and stored. 5.2 The workplace is cleaned as per workplace standard
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to):
1. PPE	1.1 Mask 1.2 Gloves 1.3 Apron 1.4 Goggles and safety glasses 1.5 Smoke absorber 1.6 Floor mat 1.7 ESD wrist band 1.8 Antistatic mat
2. Tools	2.1 Hand Tools 2.1.1 PCB Holder/PCB stand; 2.1.2 Blade cutter. 2.1.3 Point cutter. 2.1.4 Nose Pliers. 2.1.5 Precision screw driver set. 2.1.6 Tweezers. 2.1.7 BGA Stencil 2.1.8 Brush. 2.1.9 Microscope 2.1.10 Mobile opener (Metal, Plastic, Flexible plastic Card, Suction Cap) 2.1.11 Cleaning sponge. 2.1.12 SIM Ejector 2.2 Power Tools 2.2.1 Soldering Iron; 2.2.2 Electric Screwdriver 2.2.3 Mini Grinding Machine
3. Equipment	3.1 PC/Laptop 3.2 Software tools

	3.3 Multi-meter (Analog / Digital) 3.4 LCR Meter 3.5 SMD Rework Station 3.6 Glass separator machine 3.7 Soldering Iron / station 3.8 Pre heat station 3.9 8 Quick Charger 3.10 Battery Activation Circuit 3.11 DC power supply. 3.12 Oscilloscope 3.13 Microscope 3.14 Thermal camera 3.15 NAND/ EMMC / EMMCP / UFS programmer 3.16 Short Killer
4. Materials	4.1 Duster, flux remover. 4.2 Iso Propyl Alcohol (IPA). 4.3 Solder wire 4.4 Soldering lead 4.5 Jumper wire. 4.6 Flux paste. 4.7 Desoldering wick 4.8 Thermal Tape 4.9 Soldering Iron Bit/ Cartridge 4.10 Soldering mask 4.11 Freezing spray 4.12 UV Glue 4.13 BGA Paste 4.14 Adhesive
5. All Components	5.1 Fuse 5.2 Inductor 5.3 Non-electrolytic Capacitor 5.4 Electrolytic capacitor 5.5 Resistor 5.6 Coupler 5.7 Diode 5.8 LED 5.9 Receiver 5.10 Speaker 5.11 Charging Port 5.12 Headphone Port 5.13 Microphone 5.14 Display Module 5.15 Camera Module 5.16 Keypad

	5.17 Vibrator 5.18 Battery 5.19 Battery Connectors 5.20 SIM & Memory Base 5.21 Switches 5.22 Transistor 5.23 Antenna
6. All Accessories	6.1 Earphone 6.2 Charger 6.3 Communication Cables 6.4 Battery 6.5 Bluetooth Device 6.6 Wireless Charger 6.7 Power Bank 6.8 OTG Cable
7. All Issues	7.1 Power issues 7.1.1 No power 7.1.2 Stuck on Logo 7.1.3 Boot Loop 7.1.4 Restart 7.1.5 Sudden Power Off 7.2 audio issues; 7.2.1 Speaker not functioning 7.2.2 Receiver not functioning 7.2.3 Microphone not functioning 7.2.4 Headphone not working 7.3 Display issues 7.3.1 Broken display 7.3.2 No light on display 7.3.3 Display flickering 7.3.4 Touch broken 7.4 Charging issues 7.4.1 Not charging 7.4.2 Charge not store; 7.4.3 Charging port problem 7.4.4 Slow charging 7.5 Network issues 7.5.1 Searching/no service/emergency 7.5.2 Call drop/call failed 7.5.3 Weak network signal 7.6 Camera issues 7.6.1 Camera failed 7.6.2 Camera shacking

	7.6.3 Image not clear due to dust 7.6.4 Camera not focusing 7.7 Sensor issues 7.7.1 Finger-print Sensor 7.7.2 Face ID 7.7.3 Proximity Sensor 7.7.4 Accelerometer sensor 7.8 Software issues 7.8.1 No power 7.8.2 Stuck on boot logo 7.8.3 Boot loop 7.8.4 Restarting problem 7.8.5 Handset slow response 7.8.6 Locked problem
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical Aspects of Competency	Assessment required evidence that the candidate: 1.1 Identified problems of – Power issues; Audio issues; Display issues; Charging issues; Network issues; Camera issues; Sensor issues; Software issues 1.2 Troubleshooted issues of – Power issues; Audio issues; Display issues; Charging issues; Network issues; Camera issues; Sensor issues; Software issues 1.3 Identified repairing methods of - battery; charging; earpiece; network; ringer; and vibrator problems
2. Underpinning Knowledge	Trainee will acquire knowledge of: 2.1 Symptoms of common problems 2.2 Methods of repair common problems
3. Underpinning Skills	3.1 Identifying problems of – Power issues; Audio issues; Display issues; Charging issues; Network issues; Camera issues; Sensor issues; Software issues 3.2 Troubleshooting issues of – Power issues; Audio issues; Display issues; Charging issues; Network issues; Camera issues; Sensor issues; Software issues 3.3 Identifying repairing methods of - Power issues; Audio issues; Display issues; Charging issues; Network issues; Camera issues; Sensor issues; Software issues

4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource Implications	The following resources must be provided: 5.1 Workplace (simulated or actual) 5.2 Presentations 5.3 Learning manuals 5.4 Tools, equipment and materials 5.5 Testing tools 5.6 Repairable mobile phone 5.7 Service manuals
6. Methods of Assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of Assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module 7.2 Assessment should be done by a NSDA certified/ nominated assessor
<b>Accreditation Requirements</b> Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any NTVQF qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

<b>Unit Title</b>	<b>Re-balling and replacing BGA IC</b>
<b>Unit Code</b>	<b>OU-MPS-04-L3-V1</b>
<b>Nominal Hours</b>	<b>60 Hours</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to re-balling and replacing BGA ICs. It specifically includes tasks of preparing for servicing and maintenance works, performing re-balling and replacing BGA (Ball Grid Array) ICs.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables
1. Prepare for servicing and maintenance works	1.1 Personal protective equipment (PPE) is used and OSH is followed; 1.2 Work instructions are interpreted to determine job requirements; 1.3 <b><u>Tools and equipment</u></b> are selected in accordance with job requirements; 1.4 Workplace is prepared for servicing activities; 1.5 Repairing instruments are calibrated as per work requirement; 1.6 <b><u>Materials</u></b> are selected as per job requirement; 1.7 Use and prepare ESD wristband and ESD Mat
2. Perform re-balling and replacing BGA (Ball Grid Array) IC	2.1 Disassemble mobile phone following service manual procedures 2.2 Specific BGA Stencil is selected and collected; 2.3 BGA IC are separated from PCBA 2.4 BGA IC are cleaned 2.5 BGA paste stencil is applied; 2.6 SMD rework station is applied; 2.7 BGA IC are replaced; 2.8 Performance are Checked 2.9 Mobile phone is reassembled;
3. Clean and store the tools and materials	3.1 Tools and materials are cleaned and stored. 3.2 The workplace is cleaned as per workplace standard
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to):
1. Tools and equipment	1.1 SMD Rework Station 1.2 Soldering Station 1.3 Preheat station 1.4 BGA Stencil 1.5 Microscope 1.6 Hand grinder

	1.7 UV light 1.8 Opener 1.9 Point cutter 1.10 Art knife 1.11 IC Removing tool 1.12 Precision screw drivers 1.13 Tweezer 1.14 Brush 1.15 Flexible plastic paper / X-ray paper 1.16 Storage Box
2. Materials	1.1 BGA paste 1.2 Desolder wick 1.3 PCB Cleaner 1.4 Flux paste 1.5 Clean rom 1.6 UV Glue 1.7 Jumper wire
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical Aspects of Competency	Assessment required evidence that the candidate: 1.1 Prepared for servicing and maintenance works; 1.2 Selected & Collected specific BGA Stencil; 1.3 Applied BGA paste, stencil; 1.4 Applied SMD rework station; 1.5 Replaced BGA (Ball Grid Array) ICs 1.6 Checked performance;
2. Underpinning Knowledge	Trainee will acquire knowledge of: 2.1 Technique of re-balling 2.2 Technique of replacing BGA ICs
3. Underpinning Skills	3.1 Preparing for servicing and maintenance works; 3.2 Applying BGA paste and stencil 3.3 Application of SMD rework station; 3.4 Replacing BGA (Ball Grid Array) IC;

4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource Implications	The following resources must be provided: 5.1 Workplace (simulated or actual) 5.2 Workplace procedures 5.3 Standard operating procedure 5.4 Mobile phone 5.5 BGA paste 5.6 BGA stencil 5.7 BGA ICs 5.8 Rework Station 5.9 Service manual
6. Methods of Assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of Assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module 7.2 Assessment should be done by a NSDA certified/ nominated assessor
<b>Accreditation Requirements</b> Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any NTVQF qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

<b>Unit Title</b>	<b>Install Drivers, Update Firmware &amp; Unlock mobile phone</b>
<b>Unit Code</b>	<b>OU-MPS-05-L3-V1</b>
<b>Nominal Hours</b>	<b>40 hours</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to install drivers; update firmware & unlock mobile phone. It specifically includes the tasks of preparing for task to be undertaken; downloading firmware & drivers; installing drivers & upgrade firmware and performing unlocking.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the range of variables
1. Prepare for task to be undertaken	1.1 Safe work practices observed in accordance with occupational health and safety (OHS) requirements 1.2 <b><u>Appropriate equipment</u></b> is selected according to the requirement of internet connectivity 1.3 Browsing software is selected according to task requirement
2. Download firmware & drivers	2.1 Required <b><u>firmware &amp; drivers</u></b> and files are selected in accordance with work requirement 2.2 Firmware & drivers are downloaded as per standard procedure 2.3 Firmware & drivers are downloaded by using appropriate <b><u>software tools and interface device</u></b> 2.4 Firmware & drivers are saved in specified drive or folder
3. Install drivers & Upgrade firmware	3.1 Connect mobile phone to PC as per require <b><u>flash mode</u></b> 3.2 Check and ensure required drivers are installed 3.3 Appropriate tools & files are ensured 3.4 Flash tools are detected the mobile phone 3.5 Firmware is Installed 3.6 Performance is checked
4. Perform Unlocking	4.1 <b><u>Lock status</u></b> is identified 4.2 Unlock solution is applied as per procedure
<b>RANGE OF VARIABLES</b>	
<b>Variable</b>	<b>Range (Included but not limited to):</b>
1. Appropriate Equipment	1.1 Personal computers 1.2 Internet connectivity 1.3 Communication equipment

	1.4 OTG, USB, Power Supply unit 1.5 Software Interface Devices 1.6 Memory card. 1.7 Card reader
2. Firmware	2.1 Samsung - .md5/.tar 2.2 iPhone - .ipsw/dmg 2.3 MTK - .scatter / bin 2.4 SPD - .Pac / bin 2.5 Qualcomm - .tgz
3. Drivers	3.1 Android ADB driver 3.2 Apple USB driver 3.3 Android diagnostic driver 3.4 Qualcomm driver 3.5 PL-2303 Driver 3.6 MTK USB Driver 3.7 SPRD NPI USB Driver
4. Software Tools and devices	4.1 TFM Tool 4.2 Z3X Box 4.3 Infinity-Box 4.4 Octoplus Box 4.5 Unlock tool 4.6 iTunes 4.7 3U tools 4.8 Easy JTAG Plus 4.9 Sigma Box 4.10 UFI Box 4.11 UMT Dongle 4.12 DC unlocker 4.13 NCK Box

	4.14 Furious Gold 4.15 Chimera Tools 4.16 UFS Box 4.17 EFT Dongle
5. Flash Mode	5.1 Odin mode 5.2 Fastboot mode 5.3 EDL mode 5.4 Recovery mode 5.5 DFU mode 5.6 ADB mode
6. Lock Status	6.1 Operator (Region) Lock 6.2 User lock 6.3 FRP (Factory reset protection) Lock 6.4 Activation (Cloud) Lock 6.5 MDM (Mobile Device Management) Lock
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Downloaded firmware & drivers 1.2 Installed drivers & Upgraded firmware 1.3 Performed Unlocking
2. Underpinning knowledge	Trainee will acquire knowledge of: 2.1 Firmware & drivers 2.2 Installed drivers 2.3 Upgraded firmware 2.4 Locking status
3. Underpinning skills	3.1 Downloading firmware & drivers 3.2 Installing drivers & Upgraded firmware 3.3 Performing Unlocking

4. Required Attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors at workplace
5. Resource implications	The following resources must be provided. 5.1 Workplace (simulated or actual) 5.2 Workplace procedures 5.3 Learning manual 5.4 Mobile phone 5.5 Firmware 5.6 Drivers 5.7 Software tools 5.8 Interface devices 5.9 Appropriate equipment 5.10 Flash Mode 5.11 Lock Status
6. Method of assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral Questioning 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module 7.2 Assessment should be done by a NSDA certified/ nominated assessor
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## Competency Standard Development Committee

The Competency Standards for National Skills Certificate in **Mobile Phone Servicing** is Developed by NSDA on 05-09 December, 2021.

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The Competency Standards for National Skills Certificate in **Mobile Phone Servicing** is validated by SCVC on 27-28 December, 2021.

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This Competency Standard for **Mobile Phone Servicing** is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order for individuals who graduated through the established standard via competency-based assessment to be suitably qualified for a relevant job.

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