National Occupational Skill Standard (NOSS)

Occupational Title	**: Mobile Phone Repair Technician**
Level	**: 1**
Sector	**: Electronics**
Sub - Sector	**: Telecommunication**
NOSS ID/NSCO ID	**:**
ISCO NO	**:**

Council for Technical Education and Vocational Training

NATIONAL SKILL TESTING BOARD

Madhyapur Thimi-2, Sanothimi, Bhaktapur, Nepal

Developed: 2020-03-13 (2076-11-30)

2045

DACUM Panel

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2.	Mr. Ramesh Maharjan	Member	Sun rise electronics, Kathmandu
3.	Mr. Suraj Psd. Simkhada	Member	Micro link, Kathmandu
4.	Mr. Govinda Prasad Sharma	Member	AB electronics, Kathmandu
5.	Mr. Purshottam Neupane	Member	Micro link, Kathmandu
6.	Mr. Pema Wangyal Lama	Member	Micro link, Kathamndu
7.	Mr. Iraj Shrestha	Member	Micro link, Kathamndu
8.	Mr. Madan Paudel	Member	Hello-Hello, Kathmandu
9.	Mr. Sunil Psd. Shrestha	Member	Mobile Zone, Kathmandu
	DACUM Facilitator/Recorder	Member	Hello-Hello, Kathmandu
	Mr. Baikuntha Shrestha	Member	Mobile Zone, Kathmandu
	Mr. Raju Bajracharya	Member	Hello-Hello, Kathmandu
	Supervisor		
	Mr. Deepak Prasad Paudel	Member	Mobile Zone, Kathmandu

DACUM Workshop on 17-18 Aug. 2009

DACUM Verification Panel

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15.	Mr. Subash Gyawali	Member	
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Technical Sub- Committee

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1.	Prof. Dr. Jagan Nath Shrestha	Coordinator	Electronic Technical Sub Committee National Skill Testing Board Sanothimi, Bhaktapur
2.	Mr. Chandra Bhakta Nakarmi	Director	National Skill Testing Board Sanothimi, Bhaktapur
3.	Mr. Lal Bahadur Sunchuri	Member	Modern Electronics Institute, Maitighar, Kathmandu
4.	Er. Ram Babu Bhatta	Member	TRL, Electronics, Shorakhutte, Kathmandu
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7.	Mr. Deepak Prasad Paudel	Member	Dy. Director, NSTB, Sanothimi, Bhaktapur
8.	Mr. Ishwar Chandra Ghimire	Member	Skill Testing Officer, NSTB, Sanothimi, Bhaktapur
9.	Mr. Govinda Paudel	Member-Secretary	Skill Testing Officer, NSTB, Sanothimi, Bhaktapur

Technical Sub Committee Meeting on 07 Aug. 2009

The Occupational Profile (OP) Revised by:

No	Name	Designation	Organization
1	Prof. Dr. Jagan Nath Shrestha	Coordinator	Electronic Technical Sub Committee NSTB, Sanothimi, Bhaktapur
2	Mr. Yam Bhandari	Director	National Skill Testing Board Sanothimi, Bhaktapur
3	Er. Ram Chandra Lamsal	Member	Nepal Telecom Jawalakhel, Lalitpur
4	Mr. Jaya Ram Ghimire	Member	Tripple (D) Technology Pvt. Ltd. Dillibazar, Kathmandu
5	Mr. Ashok Kumar Sunchuri	Member	HIM, Electronics Pvt. Ltd. Sundhara, Kathmandu
6	Er. Madan Suwal	Member	Nepal Telecom Sundhara, Kathmandu
7	Mr. Brijesh Shrestha	Member	Mantra The Mobile Care Saugal, Lalitpur
8	Mr. Tulsi KC	Member	Sr. Skill Testing Officer NSTB, Sanothimi, Bhaktapur
9	Mr. Puspa Pyakurel	Member Secretary	Skill Testing Officer NSTB, Sanothimi, Bhaktapur
10	Mr. Suresh Maharjan	Member	Skill Testing Officer NSTB, Sanothimi, Bhaktapur

Recommended by Electronics Technical Sub Committee: 29 June 2016 (15 Ashadh 2073)

The National Occupational Skill Standard Developed by:

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2	Mr. Tek Bahadur Malla	Director	National Skill Testing Board Sanothimi, Bhaktapur
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4	Mr. Salik Ram Acharya	Member	E Parcel Pvt. Ltd. Newroad, Kathmandu
5	Mr. Santosh Niroula	Member	Smart phone gallery Pvt. Ltd. Newroad, Kathmandu
6	Mr. Jaya Ram Ghimire	Member	Tripple (D) Technology Pvt. Ltd. Dillibazar, Kathmandu
7	Mr. L.B. Sunchuri	Member	L.B. Modern Electronics Institute Pvt. Ltd. Putalisadak, Kathmandu
8	Mr. Raju Adhikari	Member	Kathmandu Multi Traders Pvt. Ltd. Baneshwor, Kathmandu
9	Mr. Tulsi KC	Member	Sr. Skill Testing Officer NSTB, Sanothimi, Bhaktapur
10	Mr. Purna Bahadur Tamang	Member Secretary	Skill Testing Officer NSTB, Sanothimi, Bhaktapur
11	Mr. Suresh Maharjan	Member	Skill Testing Officer NSTB, Sanothimi, Bhaktapur
12	Mr. Surya Prasad Adhikari	Member	Skill Testing Officer NSTB, Sanothimi, Bhaktapur

Recommended by Electronics Technical Sub Committee: 13 March 2020 (30 Falgun2076)

1	**Occupational Title: Mobile phone Repair Technician** **Level: 1**
2	**Job Description:** Mobile phone repair technician, L-1 repairs mobile phone with basic hardware and software problems along with fault documentation.
3	**UNITS OF COMPETENCY:** 1. Perform fault documentation 2. Perform hardware maintenance 3. Install software 4. Perform communications 5. Develop professionalism ***Note: Unit 4 and 5 are not for testing purpose.***
	Qualifying Notes/Prerequisites: • Physical Requirements: Sound health • Entry Requirements: As per NSTB rules. **Additional Information:** • Assessment Types: Performance test only. • Assessment Duration: 4 to 6 Hrs • Recommended Group Size: 5 to 7 candidates

5	**Unit No: 1** **Unit Title: Perform fault documentation**	**Unit code:**

	Elements of competency	**Performance standards**
	1.1 Take history	1.1.1 Customer greeted and welcomed in accordance with organization practice. 1.1.2 ***Information*** collected related to faulty mobile phone.
	1.2 Record fault details	1.2.1 ***Personal*** and ***mobile details*** clearly mentioned in job sheet. 1.2.2 Fault/problem clearly mentioned in job sheet. 1.2.3 Materials and tentative cost mentioned after inspection. 1.2.4 Tentative time required for repair mentioned. 1.2.5 Customer informed about risk factor.
	1.3 Take customer feedback	1.3.1 Customer feedback collected regarding service. 1.3.2 Customer grievances handled or report to senior.

6	**Task Performance Requirements (Tools, Equipment and Materials):** • Pen, paper, register, stapler, bill pad, job sheet and feedback form.
7	**Safety and Hygiene (Occupational Health and Safety):** • Apply Personal Protective Equipment (PPE). • Safe handling of tools, equipment and materials. • Prevent from electric shock. • Maintain proper posture (Avoid awkward position). • Maintain illumination at workplace/lab.

8	Required Knowledge		
	Technical Knowledge	**Applied Calculation**	**Graphical Information**
	• Communication technique • History taking technique • Engineering mode code • Visual inspection • Feedback collection technique • Tentative maintenance cost		

9	**Assessment of Competency**					
	Unit: 1 **Unit Title: Perform fault documentation**					
	Candidate Details			**Assessors Detail**		
	Candidate's Name: Registration Number: Symbol No: Test Centre: Test Date:			Assessors' Name 1. 2. 3.		ID/License No:

Element of competency	**Performance Standards**	**Standard Met**	**Standard Not Met**	**Evidence Type**	**Comments**
1.1 Take history	1.1.1 Customer greeted and welcomed in accordance with organization practice. 1.1.2 ***Information*** collected related to faulty mobile phone.				
1.2 Record fault details	1.2.1 ***Personal*** and ***mobile details*** clearly mentioned in job sheet. 1.2.2 Fault/problem clearly mentioned in job sheet. 1.2.3 Materials and tentative cost mentioned after inspection. 1.2.4 Tentative time required for repair mentioned. 1.2.5 Customer informed about risk factor.				
1.3 Take customer feedback	1.3.1 Customer feedback collected regarding service. 1.3.2 Customer grievances handled or report to senior.				

WT- Written Test **OQ**- Oral Question **PT-** Practical Test **DO** – Direct Observation **SR**- Supervisor's report **SN**–Simulation

RP- Role Play **PG** –Photographs **VD**- Video **CT** – Certificates **TS** – Testimonials (Reward) **PP** – Product Produced

CS – Case Study

Range Statement

Variable	Range
Information	*May include but not limited to:* • Cause of malfunctioning • Model number
Personal details	*May include but not limited to:* • Name • Address • Contact number • Mobile security status
Mobile details	*May include but not limited to:* • IMEI number • Serial number • Physical status
Safe operation	*May include but not limited to:* • Humidity • High voltage • Lightning • Sunlight • Battery

5	**Unit No: 2** **Unit Title: Perform hardware maintenance**	**Unit code:**

Elements of competency	Performance standards
2.1 Identify faulty section	2.1.1 ***Engineering mode codes*** used to identify hardware fault. 2.1.2 Mobile phone set dismantled without damaging circuit/components. 2.1.3 Mobile phone visually inspected for ***physical damages***. 2.1.4 Cold and hot testing performed on printed circuit board (PCB). 2.1.5 Faulty ***section or components/part*** identified.
2.2 Perform general servicing	2.2.1 ***Personal protective equipment (PPE)*** used in accordance with task requirements. 2.2.2 Mobile housing cleaned and dust, moisture and corrosion removed. 2.2.3 Printed circuit board (PCB) checked for physical damage. 2.2.4 Moisture, dust, rust/corrosion removed from printed circuit board. 2.2.5 Open/short circuit repaired through soldering, de-soldering and jumpering.
2.3 Replace display/digitizer unit	2.3.1 ***Display/digitizer unit*** removed without damaging circuit/components. 2.3.2 Display/digitizer unit or touch pad selected as per model specification. 2.3.3 New display/digitizer unit or touch pad replaced and checked for working condition.
2.4 Repair power supply unit	2.4.1 ***Power supply components*** checked for physical damage. 2.4.2 Continuity tested and voltage measured and verified with service manual. 2.4.3 Power supply components selected as per technical specification and repaired/replaced without damaging circuit/components. 2.4.4 Power supply unit checked for working condition.
2.5 Repair network section	2.5.1. Date and time updated through manual settings. 2.5.2. Network fault identified through engineering mode codes and manual settings. 2.5.3. Network searched through manual settings with ***band*** selection. 2.5.4. Continuity of battery status indicator (BSI) checked and repaired. 2.5.5. Antenna/antenna switch checked and repaired without damaging circuit/components. 2.5.6. Network signal checked for working condition.

	2.6 Repair connectivity section	2.6.1. Input voltage path of Wifi, Bluetooth and radio checked. 2.6.2. Faulty Wifi, Bluetooth and radio components repaired without damaging circuit/components. 2.6.3. Infrared module checked for operation and replaced. 2.6.4. Data cable/On the Go (OTG) checked for connectivity and replaced. 2.6.5. Data connector checked for voltage and data path. 2.6.6. Data connector repaired and checked for working condition.
	2.7 Replace biometrics section	2.7.1 Faulty ***biometrics*** identified. 2.7.2 Biometrics selected as per model specification. 2.7.3 Faulty ***biometrics*** replaced without damaging circuit/components. 2.7.4 Biometrics checked for working condition.
	2.8 Repair charging section	2.8.1 Voltage and continuity of ***charging components*** checked. 2.8.2 ***Charging components*** selected as per technical specification and repaired without damaging circuit/components. 2.8.3 Charging components checked for working condition.
	2.9 Repair audio/vibration unit	2.9.1 Faulty ***audio/vibration components*** identified. 2.9.2 Audio/vibration components selected as per technical specification and repaired without damaging circuit/components. 2.9.3 Audio/vibration Components checked for quality sound and vibration.
	2.10 Repair keypad section	2.10.1 Keypad removed without damaging components. 2.10.2 Moisture, dust, rust/corrosion removed from keypad. 2.10.3 Keypad selected as per technical specification and repaired without damaging circuit/components. 2.10.4 Keypad checked for working condition.
	2.11 Repair SIM/memory interface unit	2.11.1 Continuity and supply voltage of SIM/memory interface checked. 2.11.2 SIM/memory interface removed without damaging circuit/components. 2.11.3 SIM/memory interface selected as per model specification and replaced without damaging circuit/components.

		2.11.4 SIM/memory interface checked for working condition.
	2.12 Repair sensor unit	2.12.1 Faulty sensor identified through engineering mode code. 2.12.2 Sensor distance between housing and display glass adjusted. 2.12.3 Open/short circuit repaired without damaging circuit/components. 2.12.4 Proximity and light sensor selected as per technical specification and replaced without damaging circuit/components. 2.12.5 Sensor checked for working condition.
	2.13 Replace camera unit	2.13.1 Faulty camera unit identified through engineering mode code. 2.13.2 Camera unit selected as per technical specification and replaced without damaging circuit/components. 2.13.3 Camera checked for working condition.
	2.14 Assemble mobile phone	2.14.1 Mobile set re-assembled without damaging circuit/components. 2.14.2 Mobile set checked for functioning.
6	**Task Performance Requirements (Tools, Equipment and Materials):** • Multimeter, screw driver set, soldering iron, soldering wire, soldering paste, SMD re-work station, tweezers set, cleaning brush, PCB bracket/holder, ultrasonic machine (micro vibrator), magnifying glass with lamp, pin holder, booster machine (desktop charger), wire cutter/blade, nose pliers, computer set with internet facility, software & interface devices, set opener, ray detector, liquid cleaner, jumper wire, wrist band (grounding), infrared gun, cleaning materials, insulating tape, heat sink, double tape, number tag, de-soldering wire, needle, wire cutter, suction pump, smooth file, AM-scope, UV light, hot plate, first aid kit and PPE.	
7	**Safety and Hygiene (Occupational Health and Safety):** • Apply Personal Protective Equipment (PPE). • Safe handling of tools, equipment and materials. • Prevent from electric shock. • Maintain proper posture (Avoid awkward position). • Maintain illumination at workplace/lab.	

8	Required Knowledge		
	Technical Knowledge	**Applied Calculation**	**Graphical Information**

	• Tools, equipment and materials
	  ○ Use
	  ○ Safe handling
	• Electrical Parameters
	  ○ Voltage
	  ○ Current
	  ○ Resistance
	  ○ Frequency
	  ○ Capacitance
	  ○ Inductance
	  ○ Semi-conductor (Diode, Transistor, IC)
	  ○ Open and short circuit
	• Mobile phone/sets
	  ○ Brand
	  ○ Features
	  ○ Accessories and parts
	  ○ Assembling and dissembling
	  ○ Circuit diagram
	  ○ Operating system
	• Printed Circuit Board (PCB)
	  ○ Introduction
	  ○ Components/parts
	  ○ Circuit diagram
	  ○ Protection circuit
	• Testing procedure
			• Read and interpret circuit diagram
			• Read and interpret service manual
			• Read and interpret technical specification

	○ Component test ○ Cold test ○ Hot test • Types of integrated circuit (IC) and their function • Engineering mode codes • Chemical wash • Methods of soldering, de-soldering and heating • Types of display and touch pad • Transmission and receiving system • Mobile frequency, band and generation • Types of connectivity and their function • Types of biometric sensors and their function • Proximity and light sensor • Resolution and picture quality • Methods of troubleshooting • Fault documentation • Wireless Charging • Electrostatic Discharge (ESD), its purpose and precaution • Occupational health and safety		

9	Assessment of Competency					
	Unit: 2 **Unit Title: Perform hardware maintenance**					
	Candidate Details			**Assessors Detail**		
	Candidate's Name: Registration Number: Symbol No: Test Centre: Test Date:			Assessors' Name 1. 2. 3.		ID/License No:
Element of competency	**Performance Standards**		**Standard Met**	**Standard Not Met**	**Evidence Type**	**Comments**
2.1 Identify faulty section	2.1.1 ***Engineering mode codes*** used to identify hardware fault. 2.1.2 Mobile phone set dismantled without damaging circuit/components. 2.1.3 Mobile phone visually inspected for ***physical damages***. 2.1.4 Cold and hot testing performed on printed circuit board (PCB). 2.1.5 Faulty ***section or components/part*** identified.					
2.2 Perform general servicing	2.2.1 ***Personal protective equipment (PPE)*** used in accordance with task requirements. 2.2.2 Mobile housing cleaned and dust, moisture and corrosion removed. 2.2.3 Printed circuit board (PCB) checked for physical damage. 2.2.4 Moisture, dust, rust/corrosion removed from printed circuit board.					

	2.2.5 Open/short circuit repaired through soldering, de-soldering and jumpering.				
2.3 Replace display/digitizer unit	2.3.1 ***Display/digitizer unit*** removed without damaging circuit/components. 2.3.2 Display/digitizer unit or touch pad selected as per model specification. 2.3.3 New display/digitizer unit or touch pad replaced and checked for working condition.				
2.4 Repair power supply unit	2.4.1 ***Power supply components*** checked for physical damage. 2.4.2 Continuity tested and voltage measured and verified with service manual. 2.4.3 Power supply components selected as per technical specification and repaired/replaced without damaging circuit/components. 2.4.4 Power supply unit checked for working condition.				
2.5 Repair network section	2.5.1 Date and time updated through manual settings. 2.5.2 Network fault identified through engineering mode codes and manual settings. 2.5.3 Network searched through manual settings with ***band*** selection. 2.5.4 Continuity of battery status indicator (BSI) checked and repaired. 2.5.5 Antenna/antenna switch checked and repaired without damaging circuit/components. 2.5.6 Network signal checked for working condition.				

2.6 Repair connectivity section	2.6.1 Input voltage path of Wifi, Bluetooth and radio checked. 2.6.2 Faulty Wifi, Bluetooth and radio components repaired without damaging circuit/components. 2.6.3 Infrared module checked for operation and replaced. 2.6.4 Data cable/On the Go (OTG) checked for connectivity and replaced. 2.6.5 Data connector checked for voltage and data path. 2.6.6 Data connector repaired and checked for working condition.				
2.7 Replace biometrics section	2.7.1 Faulty ***biometrics*** identified. 2.7.2 Biometrics selected as per model specification. 2.7.3 Faulty ***biometrics*** replaced without damaging circuit/components. 2.7.4 Biometrics checked for working condition.				
2.8 Repair charging section	2.8.1 Voltage and continuity of ***charging components*** checked. 2.8.2 ***Charging components*** selected as per technical specification and repaired without damaging circuit/components. 2.8.3 Charging components checked for working condition.				
2.9 Repair audio/vibration unit	2.9.1 Faulty ***audio/vibration components*** identified. 2.9.2 Audio/vibration components selected as per technical specification and repaired without damaging circuit/components. 2.9.3 Audio/vibration Components checked for quality sound and vibration.				

2.10 Repair keypad section	2.10.1 Keypad removed without damaging components. 2.10.2 Moisture, dust, rust/corrosion removed from keypad. 2.10.3 Keypad selected as per technical specification and repaired without damaging circuit/components. 2.10.4 Keypad checked for working condition.				
2.11 Repair SIM/memory interface unit	2.11.1 Continuity and supply voltage of SIM/memory interface checked. 2.11.2 SIM/memory interface removed without damaging circuit/components. 2.11.3 SIM/memory interface selected as per model specification and replaced without damaging circuit/components. 2.11.4 SIM/memory interface checked for working condition.				
2.12 Repair sensor unit	2.12.1 Faulty sensor identified through engineering mode code. 2.12.2 Sensor distance between housing and display glass adjusted. 2.12.3 Open/short circuit repaired without damaging circuit/components. 2.12.4 Proximity and light sensor selected as per technical specification and replaced without damaging circuit/components. 2.12.5 Sensor checked for working condition.				
2.13 Replace camera unit	2.13.1 Faulty camera unit identified through engineering mode code. 2.13.2 Camera unit selected as per technical specification and replaced without damaging circuit/components. 2.13.3 Camera checked for working condition.				

2.14 Assemble mobile phone	2.14.1 Mobile set re-assembled without damaging circuit/components. 2.14.2 Mobile set checked for functioning.				

WT- Written Test **OQ**- Oral Question **PT-** Practical Test **DO** – Direct Observation **SR**- Supervisor's report **SN**–Simulation

RP- Role Play **PG –**Photographs **VD**- Video **CT** – Certificates **TS** – Testimonials (Reward) **PP** – Product Produced

CS – Case Study

Range Statement

Variable	Range

Engineering mode codes	*May include but not limited to:*
	• Diagnostic code
	  ○ Display
	  ○ Touch
	  ○ Audio/vibration
	  ○ Camera
	  ○ Sensor
	• IMEI

Physical damage	*May include but not limited to:* • Moisturized • Broken • Crack • Scratch • Burn
Section or components/part	*May include but not limited to:* • Display/digitizer unit • Power supply unit • Network section • Connectivity section • Biometrics section • Charging section • Audio/vibration unit

	• Keypad section • SIM/memory interface unit • Sensor unit • Camera unit
Personal protective equipment	*May include but not limited to:* • Apron • Mask • Gloves • Goggles • Anti static wrist band • Anti static slipper • Fire extinguisher
Display/digitizer unit	*May include but not limited to:* • LCD • OLED • AMOLED • Super AMOLED • P-OLED • F-OLED • TFT
Power supply components	*May include but not limited to:* • Battery • Power switch • Battery connector • Flex cable

Band	*May include but not limited to:* • 2G • 3G • 4G
Biometrics	*May include but not limited to:* • Face • Finger • IRSI scanner
Charging components	*May include but not limited to:* • Charger • Fuse • Diode • Capacitor • Charging connector • Resistor • VDR/TDR
Audio/vibration components	*May include but not limited to:* • Speaker • Vibrator • Ear speaker • Microphone • Jack • Amplifier IC

5	**Unit No: 3** **Unit Title: Install software**	**Unit code:**
	Elements of competency	Performance standards
	3.1 Identify fault	3.1.1 ***Engineering mode codes*** used to identify software issues. 3.1.2 Mobile set visually inspected and operation checked as per technical specification. 3.1.3 Software issues/problems identified.
	3.2 Install operating system	3.2.1 ***Mobile phone management software/device*** prepared and connected in accordance with ***operating system (OS)***. 3.2.2 Device driver installed as per brand and CPU types and connectivity checked. 3.2.3 Data backed up and restored after OS installation. 3.2.4 Mobile phone connected to phone management software/interface device. 3.2.5 Firmware selected and installed as per model specification. 3.2.6 Mobile phone checked for working condition.
	3.3 Unlock mobile set	3.3.1 ***Authentic documents*** collected from customer. 3.3.2 ***Lock type*** identified. 3.3.3 System prepared and connected to server/device as per lock type. 3.3.4 Data backed up and restored after unlocking. 3.3.5 User lock removed and SP lock unlocked. 3.3.6 Mobile phone checked for working condition.
6	Task Performance Requirements (Tools, Equipment and Materials): • Computer set with internet facility, multimeter, screw driver set, soldering iron, wire and paste, tweezers set, cleaning brush, booster machine (desktop charger), software & interface devices, connectivity cable, set opener, number tag, suction pump and PPE.	

7	**Safety and Hygiene (Occupational Health and Safety):** • Apply Personal Protective Equipment (PPE). • Safe handling of tools, equipment and materials. • Prevent from electric shock. • Maintain proper posture (Avoid awkward position). Maintain illumination at work place/lab.

8	Required Knowledge		
	Technical Knowledge	**Applied Calculation**	**Graphical Information**

	• Introduction to mobile software
	• Use and importance of mobile operating system
	• Types of operating system
	  ○ IOS
	  ○ Android
	  ○ JAVA
	  ○ Windows
	• System file type
	• System update and downgrade
	• Interface device
	  ○ Setup
	  ○ Operation
	  ○ Update
	• Client/Server service
	• User area formatting
	• Application and utility software
	• Device driver
	• Common software issues/problems
	• Importance of data backup
	• Data privacy and security		

9	Assessment of Competency					
	Unit: 3 **Unit Title: Install software**					
	Candidate Details			**Assessors Detail**		
	Candidate's Name: Registration Number: Symbol No: Test Centre: Test Date:			Assessors' Name 1. 2. 3.		ID/License No:

Element of competency	Performance Standards	Standard Met	Standard Not Met	Evidence Type	Comments
3.1 Identify fault	3.1.1 ***Engineering mode codes*** used to identify software issues. 3.1.2 Mobile set visually inspected and operation checked as per technical specification. 3.1.3 Software issues/problems identified.				
3.2 Install operating system	3.2.1 ***Mobile phone management software/device*** prepared and connected in accordance with ***operating system (OS)***. 3.2.2 Device driver installed as per brand and CPU types and connectivity checked. 3.2.3 Data backed up and restored after OS installation. 3.2.4 Mobile phone connected to phone management software/interface device. 3.2.5 Firmware selected and installed as per model specification. 3.2.6 Mobile phone checked for working condition.				

3.3 Unlock mobile set	3.3.1 ***Authentic documents*** collected from customer. 3.3.2 ***Lock type*** identified. 3.3.3 System prepared and connected to server/device as per lock type. 3.3.4 Data backed up and restored after unlocking. 3.3.5 User lock removed and SP lock unlocked. 3.3.6 Mobile phone checked for working condition.				

WT- Written Test **OQ**- Oral Question **PT-** Practical Test **DO** – Direct Observation **SR**- Supervisor's report **SN**–Simulation

RP- Role Play **PG –**Photographs **VD**- Video **CT** – Certificates **TS** – Testimonials (Reward) **PP** – Product Produced

CS – Case Study

Range Statement

Variable	Range

Engineering mode codes	*May include but not limited to:*
	• Diagnostic code
	  ○ Lock/unlock status
	  ○ Software version
	  ○ Warranty details
	• IMEI

Mobile phone management software	*May include but not limited to:* • ODIN • Smart switch • Sony PC companion • LG bridge • I tunes
Device	*May include but not limited to:* • Z3X box • Miracle box • Ultimate Multi Tools
Authentic documents	*May include but not limited to:* • Citizenship • Identity card • Purchase bill • Warranty card

	• Serial number matching box
Lock type	*May include but not limited to:* • User lock • Service provider lock