Telecom Sector Skill Council

GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP

N·S·D·C
National Skill Development Corporation
Transforming the skill landscape

What are Occupational Standards(OS)?

➢ OS describe what individuals need to do, know and understand in order to carry out a particular job role or function

➢ OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack- Handset Repair Engineer (Level II)

SECTOR: TELECOM

SUB-SECTOR: Handset

OCCUPATION: Customer Service

REFERENCE ID: TEL/Q2201

ALIGNED TO: NCO-2015/7422.0203

Brief Job Description: Handset repair engineer is responsible for performing handset repair including hardware and software components and testing the handset for adequacy post repair.

Personal Attributes: This job requires the individual to be analytical and be able to handle high pressure situations to successfully perform the assigned responsibilities. He should have basic written and oral communication skills and should be able to apply practical judgement to successfully perform the assigned responsibilities.

Qualifications Pack Code	TEL/Q2201		
Job Role	Handset Repair Engineer (Level II)		
Credits NSQF	TBD	Version number	1.0
Sector	Telecom	Drafted on	15/07/13
Sub-sector	Handset Segment	Last reviewed on	29/04/15
Occupation	Customer Service	Next review date	31/05/17
NSQC Clearance on	18/06/2015		

Job Details

Job Role	Handset Repair Engineer (Level II)
Role Description	Handset repair engineer(Level II) is responsible for performing handset repair including hardware and software components, testing the handset for adequacy post repair and maintaining inventory levels of the hardware components.
NSQF level	4
Minimum Educational Qualifications* Maximum Educational Qualifications*	10+2 / ITI / Diploma / Certification in repairing services Bachelor in Technology (Electronics, Computer Science, IT and related field)
Training	Trainings on Digital electronics, handset(general), Operating system.
Minimum Job Entry Age	18 Years
Experience	Fresher (For Entrepreneur career) Minimum 2 years in handset repair (For Industry career)
Applicable National Occupational Standards (NOS)	Click to open the below hyperlinks Compulsory: 1. TEL/N2203 (**Perform handset repair- hardware**) 2. TEL/N2204 (**Perform handset repair- software**) 3. TEL/N2205 (**Perform tablet repair- hardware & software**) Optional: N.A.
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard, which is denoted by an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms

Keywords /Terms	Description
ESD	Electro Static Discharge
KPI	Key Performance Indicator
OHS	Organizational Health & Safety
RAM	Random Access Memory
SHE	Safety, Health & Environment
SLA	Service Level Agreement
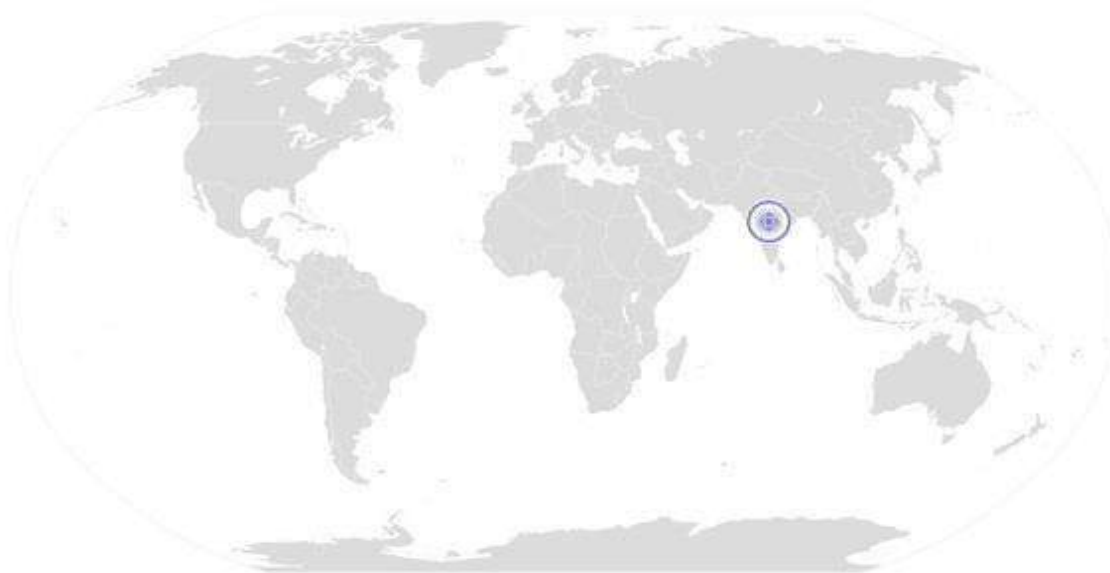
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TEL/N2203   **Perform handset repair - hardware**

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National Occupational Standard

<u>Overview</u>

This unit is about carrying out repair of handset equipment and related components.

Unit Code	TEL/N2203
Unit Title (Task)	Perform handset repair -hardware
Description	This unit is about carrying out repair activities related to handset hardware
Scope	This unit/task covers the following: • Undertake fault diagnosis • Get appropriate spares from internal store • Perform handset hardware related repair activities(handset equipment , associated components etc) • Test handset post repair activity to ensure optimal performance • Report and document the status at the end of repair activity

Performance Criteria (PC) w.r.t. the Scope

Element	Performance Criteria
Obtain handsets from customer/ relevant teams	To be competent, the user/individual on the job must be able to: PC1. ensure faulty handsets are received from the customer facing team PC2. obtain/ note fault details as mentioned by the customer facing team and other handset specifications PC3. obtain the committed repair timelines (SLAs) PC4. prioritize repair activities as per guidelines
Arrange for tools and spares	To be competent, the user/individual on the job must be able to: PC1. ensure clean, neat, dust free and organized working environment PC2. determine components required based on fault diagnosis PC3. obtain materials required(such as components, equipments, testing devices and other inventory) as per organizational procedures PC4. ensure that tools, equipments and testing devices are in proper working condition and caliberated PC5. ensure compliance with lead free soldering techniques
Undertake Handset repair activities	To be competent, the user/individual on the job must be able to: PC1. refer the company (handset manufacturer) specific technical database to identify root cause of handset fault and to determine rectification options PC2. isolate the cause of fault by conducting appropriate diagnostic test, in case details are not available PC3. determine the options to rectify the fault and confirm with supervisors, if required

National Occupational Standard

	PC4. dismantle handset/components as per organizational guidelines/procedures PC5. ensure rectification of handset fault within the SLAs PC6. ensure timely escalation of emergency/ unresolved issues according to established procedures PC7. ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages,first time fix etc
Test effectiveness & close activity	To be competent, the user/individual on the job must be able to: PC1. assess test equipments are appropriately calibrated PC2. confirm effectiveness of the repair process, by utilizing appropriate test equipments as per standard test processes PC3. ensure that fault has been rectified without any collateral damage to handset PC4. handover repaired handset to appropriate authority PC5. ensure completion of administrative jobs like site clearance, return of test equipments
Safety requirements (Equipment & Self)	To be competent, the user/individual on the job must be able to: PC1. pass through ESD test before entering the facility PC2. ensure that protection equipments like ESD equipments, anti-static bands, clothes and gloves are appropriately used as required PC3. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms PC4. ensure escalation of safety incidents to relevant authorities as per guidelines
Report & Record	To be competent, the user/individual on the job must be able to: PC1. ensure that handset inventory in hand for repairs is tracked and accounted for appropriately as per company procedures PC2. ensure record sheets are completed accurately, as per company guidelines PC3. ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity PC4. retain documents for specific period of time, as per company procedure
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures ,fire and power failures KA3. applicable Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) including production rate and bounce rate (external and internal) KA4. types of documentation in organization and importance of the same KA5. process for obtaining sign-off post completion of the maintenance activities

	KA6. knowledge of spare management and repair & return process for faulty components
	KA7. SHE and OHS guidelines and regulations as per company's norms
	KA8. protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used
	KA9. first aid requirements in case of electrical shocks, cuts and other common injuries
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. functionality and features/working of handsets KB2. handset specific operating system and user interface KB3. functionality of hardware components in a handset like chipsets, processor, screen, touchpad etc. KB4. have basic knowledge of electronic components in a handset KB5. procedure to dismantle and assemble handset and handset components KB6. range of tools and testing equipment (multimeters, frequency generators etc) available and their functionality KB7. ESD hazards and their effect on electronic components KB8. range of handset related problems and their possible solutions KB9. standard fault-finding (troubleshooting) techniques

Skills (S)

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	Reading skills
	The user/ individual on the job needs to know and understand how to: SA1. read and understand technical manuals, work orders and reports SA2. read and understand organizational health and safety instructions
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA3. fill up record sheets clearly, concisely and accurately as per company procedures
	Communication Skills
	The user/ individual on the job needs to know and understand how to: SA4. clearly communicate relevant information to supervisors SA5. respond appropriately to queries SA6. communicate with customer/customer facing teams to understand handset performance issues SA7. communicate in the local language SA8. convey proposed solution to the customers

	Time Management Skills	
	The user/individual on the job needs to know and understand how to: SA9. prioritize and execute tasks in a high-pressure environment SA10. use and maintain resources efficiently and effectively	
	Analytical Skills	
	The user/ individual on the job needs to know and understand how to: SA11. analyse (and understand) customer complaints SA12. interpret reports, readings and numerical data SA13. keep up to date with new technology and performance issues	
	Other Skills	
	The user/individual on the job needs to know and understand how to: SA14. create and maintain effective working relationships and team environment through collaboration SA15. take initiatives and progressively assume increased responsibilities SA16. share knowledge with other team members and colleagues	
B. Professional Skills	**Equipment operating Skills**	
	The user/individual on the job needs to know and understand how to: SB1. use and access all handset features and applications SB2. take data backup SB3. operate handset testing equipments including test jigs, frequency generators etc SB4. connect hadset PCB to PC/test equipment for diagnostics SB5. initialize PC based diagnostic tools	
	Handset repairing skills	
	The user/individual on the job needs to know and understand how to: SB6. undertake fault diagnostic SB7. interpret test results to identify and localize faults SB8. utilize appropriate mechanisms and tools to rectify the faults SB9. utilize appropriate communication channels to escalate unresolved problems SB10. test handset to confirm resolve of the reported fault	
	Handset/Component Handling skills	
	The user/individual on the job needs to know and understand how to: SB11. safely dismantle/assemble handset using the right tools SB12. safely connectorise the handset to PC for software transfer SB13. safe remove/replace components using right tools	

	SB14. compliance to ESD protection measures
	Toubleshooting Skills
	The user/individual on the job needs to know and understand how to: SB15. how to approach a defect SB16. make use of standard OEM specified troubleshooting steps SB17. Interpret intermediate results and progress fault rectification accordingly SB18. utilize appropriate tools to rectify faults
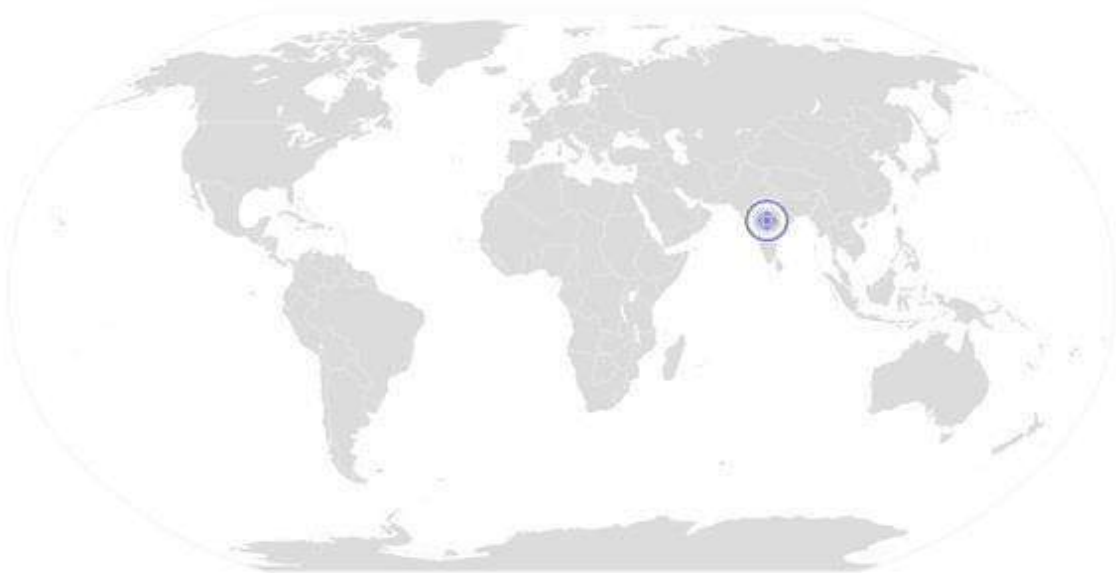
NOS Version Control:

NOS Code	TEL/N2203		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/07/13
Industry Sub-sector	Handset Segment	Last reviewed on	29/04/15
		Next review date	31/05/17

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National Occupational Standard

Overview

This unit is about carrying out fault rectification related to handset related software.

Unit Code	TEL/N2204
Unit Title (Task)	Perform handset repair – software
Description	This unit is about carrying out fault rectification related to handset software
Scope	This unit/task covers the following: • Undertake fault diagnosis • Ensure availability of correct software/software version • Perform software uploading/upgrade • Test handset post repair to ensure optimal performance • Report and document the status at the end of repair activity

Performance Criteria (PC) w.r.t. the Scope

Element	Performance Criteria
Obtain handsets from customer/ relevant teams	To be competent, the user/individual on the job must be able to: PC1. ensure faulty handsets are received from customer facing team PC2. obtain/ note fault details as mentioned by the customer facing team and other handset specifications PC1. obtain the committed repair timelines (SLAs) PC2. prioritize repair activities as per guidelines
Determine change requirement	To be competent, the user/individual on the job must be able to: PC1. undertake fault diagnosis on software components PC2. interpret results and isolate fault PC3. estimate repair timelines PC4. refer the company (handset manufacturer) specific technical database for optimal rectification options PC5. check availability of correct software versions/modules
Arrange for related software, tools and spares	To be competent, the user/individual on the job must be able to: PC1. ensure clean, dust free and organized working environment PC2. ensure availability of connectors/cables PC3. obtain and ensure all tools are available and diagnostic equipment operational PC4. obtain software required as per organizational procedures PC5. ensure that the software versions are current and ready to use
Undertake repair activities	To be competent, the user/individual on the job must be able to: PC1. carry out necessary software fault rectification (correction/Upgradation, software replacement)

	PC2. ensure rectification of handset fault within the SLAs
	PC3. check handset performance to ascertain fault has been rectified
	PC4. ensure timely escalation of emergency/ unresolved issues according to established procedures
	PC5. ensure all repairs conform to the quality targets
Test effectiveness & close activity	To be competent, the user/individual on the job must be able to: PC1. confirm effectiveness of the repair process, by testing the handset utilizing appropriate software jigs and standard test processes PC2. take appropriate action to rectify any deficiencies post testing PC3. ensure that fault has been rectified without any consequal damage PC4. handover repaired handset to QA team PC5. ensure completion of administrative jobs like site clearance, return of test equipments
Safety requirements (Equipment & Self)	To be competent, the user/individual on the job must be able to: PC1. pass through ESD test before entering the facility PC2. ensure that protection equipments like anti-static bands, clothes and gloves are appropriately used as required PC3. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms PC4. ensure escalation of safety incidents to relevant authorities as per guidelines
Report & Record	To be competent, the user/individual on the job must be able to: PC1. ensure that handset inventory in hand (for repairs) is tracked and accounted for appropriately PC2. ensure record sheets are completed accurately, as per company guidelines PC3. ensure all concerned (supervisors, QA team, customer teams) are notified of the completion of repair activity PC4. retain documents for specific period of time, as per company procedure
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures ,fire and power failures KA3. applicable Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) including production rate and bounce rate (external and internal)

	KA4. types of documentation in organization and importance of the same KA5. process for obtaining sign-off post completion of the maintenance activities KA6. knowledge of spare management and repair & return process for faulty equipments KA7. SHE and OHS guidelines and regulations as per company's norms KA8. protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used KA9. first aid requirements in case of electrical shocks, cuts and other common injuries
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. functionality, features and basic working of handsets KB2. basic computer knowledge to be able to run diagnostic tools KB3. handset specific operating system, their versions and user interface KB4. functionality of hardware components, software applications, screen, touchpad etc. KB5. functionality of various software jigs KB6. mobile technologies like GSM & CDMA KB7. default setting of handsets and networks KB8. range of handset software related problems and their possible solutions KB9. standard fault-finding (troubleshooting) techniques KB10. standard software testing techniques KB11. standard repairing process

Skills (S)

A. Core Skills/ Generic Skills	**Reading skills**
	The user/ individual on the job needs to know and understand how to: SA1. read and understand technical manuals, work orders and reports SA2. read and understand organizational health and safety instructions
	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. fill up record sheets clearly, concisely and accurately as per company procedures
	Communication Skills
	The user/ individual on the job needs to know and understand how to: SA2. clearly communicate relevant information to supervisors SA3. respond appropriately to any queries SA4. communicate with customer/customer facing teams to understand handset performance issues SA5. communicate in the local language SA6. convey proposed solution to the customers

	Time Management Skills
	The user/individual on the job needs to know and understand how to: SA7. prioritize and execute tasks in a high-pressure environment SA8. use and maintain resources efficiently and effectively
	Analytical Skills
	The user/ individual on the job needs to know and understand how to: SA9. analyse (and understand) customer complaints SA10. interpret reports, readings and numerical data SA11. keep up to date with new technology
	Other Skills
	The user/individual on the job needs to know and understand how to: SA12. create and maintain effective working relationships and team environment through collaboration SA13. take initiatives and progressively assume increased responsibilities SA14. share knowledge with other team members and colleagues
B. Professional Skills	**Software Skills**
	The user/individual on the job needs to know and understand how to: SB1. identifying correct software version/modules SB2. ascertain correct and complete porting/update of software in the handset SB3. execute basic software commands for data transfer SB4. data backup prior attempting repairs SB5. initialize PC based diagnostic tools
	Handset repairing skills
	The user/individual on the job needs to know and understand how to: SB6. interpret diagnostic test results to identify and localize faults SB7. connect up handset to PC using connectors/cables SB8. undertake corrective repairs by software porting/updates SB9. undertake checks to confirm that the problem is resolved SB10. utilize appropriate communication channels to escalate unresolved problems to relevant personnel
	Toubleshooting Skills
	The user/individual on the job needs to know and understand how to: SB1. how to approach a defect SB2. make use of standard OEM specified troubleshooting steps SB3. interpret intermediate results and progress fault rectification accordingly SB4. utilize appropriate tools to rectify faults

NOS Version Control

NOS Code	TEL/N2204		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/07/13
Industry Sub-sector	Handset Segment	Last reviewed on	29/04/15
		Next review date	31/05/17

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National Occupational Standard

 Ov ervi ew

This unit is about carrying out hardware & software repair of tablet PCs.

Unit Code	TEL/N2205
Unit Title (Task)	Tablet Repair – Hardware & Software
Description	This unit is about carrying out repair activities related to tablet hardware & software.
Scope	This unit/task covers the following: • Undertake fault diagnosis • Identify hardware components to be repaired/replaced • Identify software components to be formatted/reloaded • Perform tablet hardware & software related repair activities • Test tablet post repair activity to ensure optimal performance • Report and document the status at the end of repair activity

Performance Criteria (PC) w.r.t. the Scope

Element	Performance Criteria
Obtain tablets from customer/relevant teams	To be competent, the user/individual on the job must be able to: PC1. ensure faulty tablets are received from the customer facing team PC2. obtain/ note fault details as mentioned by the customer facing team and other tablet specifications PC3. obtain the committed repair timelines (SLAs) PC4. prioritize repair activities as per guidelines
Arrange for tools and spares	To be competent, the user/individual on the job must be able to: PC1. ensure clean, neat, dust free and organized working environment PC2. determine hardware components & software required based on fault diagnosis PC3. obtain hardware & software required(such as components, OS, Applications, testing devices and other inventory) as per organizational procedures PC4. ensure that tools, equipment and testing devices are in proper working condition and calibrated PC5. ensure compliance with lead free soldering techniques
Undertake tablet repair activities	To be competent, the user/individual on the job must be able to: PC1. refer the company (tablet manufacturer) specific technical database to identify root cause of tablet fault and to determine rectification options PC2. isolate the cause of fault by conducting appropriate hardware/software diagnostic test PC3. determine the options to rectify the fault and confirm with supervisors, if required

	PC4. dismantle tablet as per product/manufacturer guidelines PC5. ensure rectification of tablet fault within the SLAs PC6. ensure timely escalation of emergency/ unresolved issues according to established procedures PC7. ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages, first time fix etc.
Test effectiveness & close activity	To be competent, the user/individual on the job must be able to: PC1. assess test equipment is appropriately calibrated PC2. confirm effectiveness of the repair process, by utilizing appropriate test equipment as per standard test processes PC3. ensure that fault has been rectified without any collateral damage to tablet PC4. handover repaired tablet to appropriate authority PC5. ensure completion of administrative jobs like site clearance, return of test equipment
Safety requirements (Equipment & Self)	To be competent, the user/individual on the job must be able to: PC1. pass through ESD test before entering the facility PC2. ensure that protection equipment like ESD equipment, anti-static bands, clothes and gloves are appropriately used as required PC3. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms PC4. ensure escalation of safety incidents to relevant authorities as per guidelines
Report & Record	To be competent, the user/individual on the job must be able to: PC1. ensure that tablet inventory in hand for repairs is tracked and accounted for appropriately as per company procedures PC2. ensure record sheets are completed accurately, as per company guidelines PC3. ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity PC4. retain documents for specific period of time, as per company procedure
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures ,fire and power failures KA3. applicable Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) including production rate and bounce rate (external and internal) KA4. types of documentation in organization and importance of the same KA5. process for obtaining sign-off post completion of the maintenance activities KA6. knowledge of spare management and repair & return process for faulty components KA7. Knowledge of obtaining verified OS, patches and application software from correct organizational channel KA8. SHE and OHS guidelines and regulations as per company's norms

	KA9. protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used KA10. first aid requirements in case of electrical shocks, cuts and other common injuries
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basic electronics KB2. functional differences between computer, laptop, smartphone, tablet, i-phone and similar devices KB3. types and peculiarities of OS in tablets KB4. types and peculiarities of tablet user interface KB5. basic details and features of Windows and Android OS KB6. functionality of hardware components in a tablet like touchscreen, LCD screen, camera, speakers, PCB etc. KB7. procedure to dismantle and assemble tablet KB8. formatting and installing of OS KB9. drivers and application installation in tablets KB10. range of tools and testing equipment (multi-meter, oscilloscope etc.) available and their functionality KB11. ESD hazards and their effect on electronic components KB12. range of tablet related problems and their possible solutions KB13. standard fault-finding (troubleshooting) techniques

Skills (S)	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. fill up record sheets clearly, concisely and accurately as per company procedures
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. read and understand technical manuals, work orders and reports SA3. read and understand organizational health and safety instructions
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. clearly communicate relevant information to supervisors SA5. respond appropriately to queries SA6. communicate with customer/customer facing teams to understand tablet SA7. performance issues SA8. communicate in the local language SA9. convey proposed solution to the customers

	Time Management Skills
	The user/individual on the job needs to know and understand how to: SA10. prioritize and execute tasks in a high-pressure environment SA11. use and maintain resources efficiently and effectively
	Analytical Skills
	The user/individual on the job needs to know and understand how to: SA12. analyze (and understand) customer complaints SA13. interpret reports, readings and numerical data SA14. keep up to date with new technology and performance issues
	Other Skills
	The user/individual on the job needs to know and understand how to: SA15. create and maintain effective working relationships and team environment through collaboration SA16. take initiatives and progressively assume increased responsibilities SA17. share knowledge with other team members and colleagues
B. Professional Skills	**Equipment Operating Skills**
	The user/individual on the job needs to know and understand how to: SB1. use and access all handset features and applications SB2. take data backup SB3. operate tablet testing equipment including test jigs, oscilloscope etc. SB4. connect tablet PCB to PC/test equipment for diagnostics SB5. initialize PC based diagnostic tools
	Tablet Repairing Skills
	The user/individual on the job needs to know and understand: SB6. undertake fault diagnostic SB7. identify OS and application versions SB8. interpret test results to identify and localize faults SB9. utilize appropriate mechanisms and tools to rectify the faults SB10. execute basic software commands for data transfer, updates SB11. utilize appropriate communication channels to escalate unresolved problems SB12. test tablet to confirm resolve of the reported fault
	Tablet Handling Skills
	The user/individual on the job needs to know and understand how to: SB13. safely dismantle/assemble tablet using the right tools SB14. safely connect the table to PC for software transfer and diagnostic SB15. safely remove/replace components using right tools SB16. compliance to ESD protection measures

	Troubleshooting Skills
	The user/individual on the job needs to know and understand how to:
	SB17. how to approach a defect
	SB18. make use of standard OEM specified troubleshooting steps
	SB19. interpret intermediate results and progress fault rectification accordingly
	SB20. utilize appropriate tools to rectify faults

NOS Version Control

NOS Code	TEL/N2205		
Credits NSQF	**TBD**	**Version number**	**1.0**
Industry	**Telecom**	**Drafted on**	**16/09/13**
Industry Sub-sector	**Handset Segment**	**Last reviewed on**	**29/04/15**
		Next review date	**31/05/17**

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CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role   Handset Repair Engineer Level II

Qualification Pack   TEL/Q2201

Sector Skill Council   Telecom

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Individual assessment agencies will create *unique question papers for theory part for each candidate at each examination/training center* (as per assessment criteria below)

4. To pass the Qualification Pack , every trainee should score a minimum of 40% in every NOS and 50% overall.

5. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessment Outcome	Assessment Criteria		Marks Allocation			
	Elements	**Performance Criteria**	**Total Mark (200)**	**Out Of**	**Theory**	**Skills Practical**
NOS Title TEL/N2203 (Perform handset repair - hardware)	Obtain handsets from customer/ relevant teams	PC1. ensure faulty handsets are received from the customer facing team	100			
		PC2. obtain/ note fault details as mentioned by the customer facing team and other				
		handset specifications				
		PC3. obtain the committed repair timelines (SLAs)		15	15	
		PC4. prioritize repair activities as per guidelines		5		5
	Arrange for tools and spares	PC1. ensure clean, neat, dust free and organized working environment				
		PC2. determine components required based on fault diagnosis				
		PC3. obtain materials required(such as components, equipments, testing devices and other inventory) as per organizational procedures				

	PC4. ensure that tools, equipments and testing devices are in proper working condition and caliberated			
	PC5. ensure compliance with lead free soldering techniques	15	15	
Undertake Handset repair activities	PC1. refer the company (handset manufacturer) specific technical database to identify root cause of handset fault and to determine rectification options			
	PC2. isolate the cause of fault by conducting appropriate diagnostic test, in case details are not available			
	PC3. determine the options to rectify the fault and confirm with supervisors, if required			
	PC4. dismantle handset/components as per organizational guidelines/procedures			
	PC5. ensure rectification of handset fault within the SLAs			
	PC6. ensure timely escalation of emergency/ unresolved issues according to established procedures			
	PC7. ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages,first time fix etc	45		45
Safety requirements (Equipment & Self)	PC1. pass through ESD test before entering the facility			
	PC2. ensure that protection equipments like ESD equipments, anti-static bands, clothes and gloves are appropriately used as required			
	PC3. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms			
	PC4. ensure escalation of safety incidents to relevant authorities as per guidelines	10	10	
Report & Record	PC1. ensure that handset inventory in hand for repairs is tracked and accounted for appropriately as per company procedures			

NOS	Sub-function	Performance Criteria	Total	100	50	50
		PC2. ensure record sheets are completed accurately, as per company guidelines				
		PC3. ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity				
		PC4. retain documents for specific period of time, as per company procedure		10	10	
2. TEL/N2204 (Perform handset repair – software)	Obtain handsets from customer/ relevant teams	PC1. ensure faulty handsets are received from customer facing team	100 **Total**	100	50	50
		PC2. obtain/ note fault details as mentioned by the customer facing team and other handset specifications				
		PC3. obtain the committed repair timelines (SLAs)		10	10	
		PC4. prioritize repair activities as per guidelines		5	5	
	Determine change requirement	PC1. undertake fault diagnosis on software components				
		PC2. interpret results and isolate fault				
		PC3. estimate repair timelines				
		PC4. refer the company (handset manufacturer) specific technical database for optimal rectification options				
		PC5. check availability of correct software versions/modules		15	7	8
	Arrange for related software, tools and spares	PC1. ensure clean, dust free and organized working environment				
		PC2. ensure availability of connectors/cables				
		PC3. obtain and ensure all tools are available and diagnostic equipment operational				
		PC4. obtain software required as per organizational procedures				
		PC5. ensure that the software versions are current and ready to use		10	10	
	Undertake repair activities	PC1. carry out necessary software fault rectification (correction/Upgradation, software replacement)				
		PC2. ensure rectification of handset fault within the SLAs				

		PC3. check handset performance to ascertain fault has been rectified				
		PC4. ensure timely escalation of emergency/ unresolved issues according to established procedures				
	Test effectiveness & close activity	PC5. ensure all repairs conform to the quality targets		25	3	22
		PC1. confirm effectiveness of the repair process, by testing the handset utilizing appropriate software jigs and standard test processes				
		PC2. take appropriate action to rectify any deficiencies post testing				
		PC3. ensure that fault has been rectified without any consequal damage				
		PC4. handover repaired handset to QA team				
	Safety requirements (Equipment & Self)	PC5. ensure completion of administrative jobs like site clearance, return of test equipments		15	3	12
		PC1. pass through ESD test before entering the facility				
		PC2. ensure that protection equipments like anti-static bands, clothes and gloves are appropriately used as required				
		PC3. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms				
	Report & Record	PC4. ensure escalation of safety incidents to relevant authorities as per guidelines		10	10	
		PC1. ensure that handset inventory in hand (for repairs) is tracked and accounted for appropriately				
		PC2. ensure record sheets are completed accurately, as per company guidelines				
		PC3. ensure all concerned (supervisors, QA team, customer teams) are notified of the completion of repair activity				
		PC4. retain documents for specific period of time, as per company procedure		10	10	
			Total	100	58	42