

# QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR TELECOM INDUSTRY

## 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

**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.

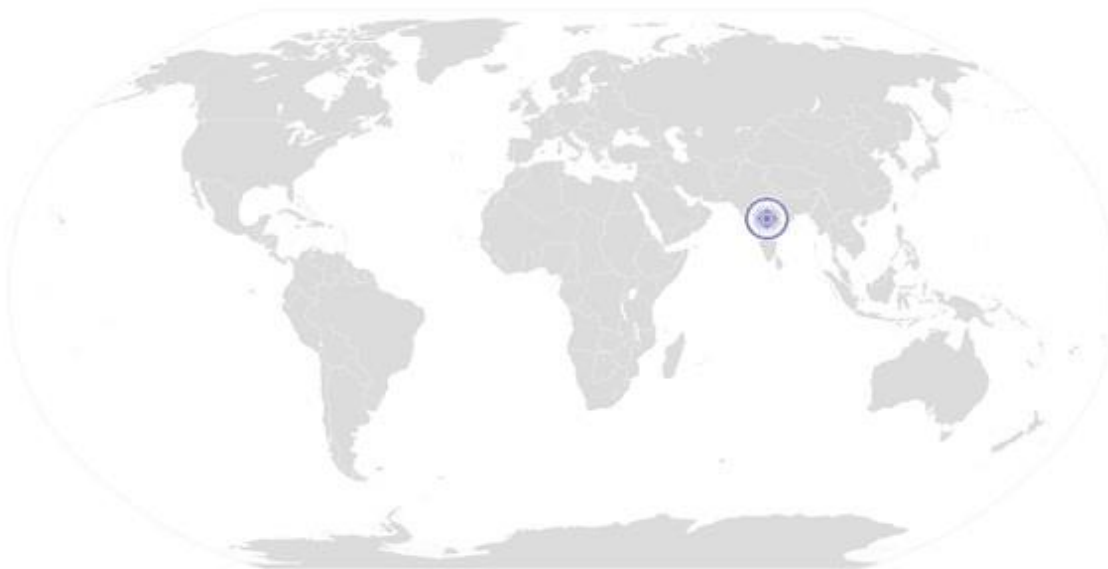
Job Details	<b>Qualifications Pack Code</b>	<b>TEL/Q2201</b>		
	<b>Job Role</b>	<b>Handset Repair Engineer (Level II)</b>		
	<b>Credits(NVEQF/NVQF/NSQF) [OPTIONAL]</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
	<b>Sector</b>	<b>Telecom</b>	<b>Drafted on</b>	<b>15/07/13</b>
	<b>Sub-sector</b>	<b>Handset Segment</b>	<b>Last reviewed on</b>	<b>17/09/13</b>
	<b>Occupation</b>	<b>Customer Service</b>	<b>Next review date</b>	<b>31/05/15</b>

<b>Job Role</b>	<b>Handset Repair Engineer (Level II)</b>
<b>Role Description</b>	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.
<b>NVEQF/NVQF level</b>	4
<b>Minimum Educational Qualifications</b>	10+2 / ITI / Diploma / Certification in repairing services
<b>Maximum Educational Qualifications</b>	Bachelor in Technology (Electronics, Computer Science, IT and related field)
<b>Training</b>	Trainings on Digital electronics, handset( general), Operating system.
<b>Experience</b>	Fresher (For Entrepreneur career) Minimum 2 years in handset repair (For Industry career)
<b>Applicable National Occupational Standards (NOS)</b>	Click to open the below hyperlinks <b>Compulsory:</b> 1. TEL/N2203 ( <a href="#">Perform handset repair- hardware</a> ) 2. TEL/N2204 ( <a href="#">Perform handset repair- software</a> ) <b>Optional:</b> 3. TEL/N2205 ( <a href="#">Perform tablet repair- hardware &amp; software</a> )
<b>Performance Criteria</b>	As described in the relevant OS units

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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# National Occupational Standard



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## Overview

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

<b>Unit Code</b>	TEL/N2203
<b>Unit Title (Task)</b>	Perform handset repair -hardware
<b>Description</b>	This unit is about carrying out repair activities related to handset hardware
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Undertake fault diagnosis</li> <li>• Get appropriate spares from internal store</li> <li>• Perform handset hardware related repair activities(handset equipment , associated components etc)</li> <li>• Test handset post repair activity to ensure optimal performance</li> <li>• Report and document the status at the end of repair activity</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Obtain handsets from customer/ relevant teams</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure faulty handsets are received from the customer facing team</p> <p>PC2. obtain/ note fault details as mentioned by the customer facing team and other handset specifications</p> <p>PC3. obtain the committed repair timelines (SLAs)</p> <p>PC4. prioritize repair activities as per guidelines</p>
<b>Arrange for tools and spares</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure clean, neat, dust free and organized working environment</p> <p>PC2. determine components required based on fault diagnosis</p> <p>PC3. obtain materials required( such as components, equipments, testing devices and other inventory) as per organizational procedures</p> <p>PC4. ensure that tools, equipments and testing devices are in proper working condition and calibrated</p> <p>PC5. ensure compliance with lead free soldering techniques</p>
<b>Undertake Handset repair activities</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. refer the company (handset manufacturer) specific technical database to identify root cause of handset fault and to determine rectification options</p> <p>PC2. isolate the cause of fault by conducting appropriate diagnostic test, in case details are not available</p> <p>PC3. determine the options to rectify the fault and confirm with supervisors, if required</p>



TEL/N2203

**Perform handset repair - hardware**

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

TEL/N2203

**Perform handset repair - hardware**

	<p>KA6. knowledge of spare management and repair &amp; return process for faulty components</p> <p>KA7. SHE and OHS guidelines and regulations as per company's norms</p> <p>KA8. protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations ) that are required to be used</p> <p>KA9. first aid requirements in case of electrical shocks, cuts and other common injuries</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. functionality and features/working of handsets</p> <p>KB2. handset specific operating system and user interface</p> <p>KB3. functionality of hardware components in a handset like chipsets, processor, screen, touchpad etc.</p> <p>KB4. have basic knowledge of electronic components in a handset</p> <p>KB5. procedure to dismantle and assemble handset and handset components</p> <p>KB6. range of tools and testing equipment (multimeters, frequency generators etc) available and their functionality</p> <p>KB7. ESD hazards and their effect on electronic components</p> <p>KB8. range of handset related problems and their possible solutions</p> <p>KB9. standard fault-finding (troubleshooting) techniques</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Reading skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. read and understand technical manuals, work orders and reports</p> <p>SA2. read and understand organizational health and safety instructions</p> <p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. fill up record sheets clearly, concisely and accurately as per company procedures</p> <p><b>Communication Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA4. clearly communicate relevant information to supervisors</p> <p>SA5. respond appropriately to queries</p> <p>SA6. communicate with customer/customer facing teams to understand handset performance issues</p> <p>SA7. communicate in the local language</p> <p>SA8. convey proposed solution to the customers</p>



TEL/N2203

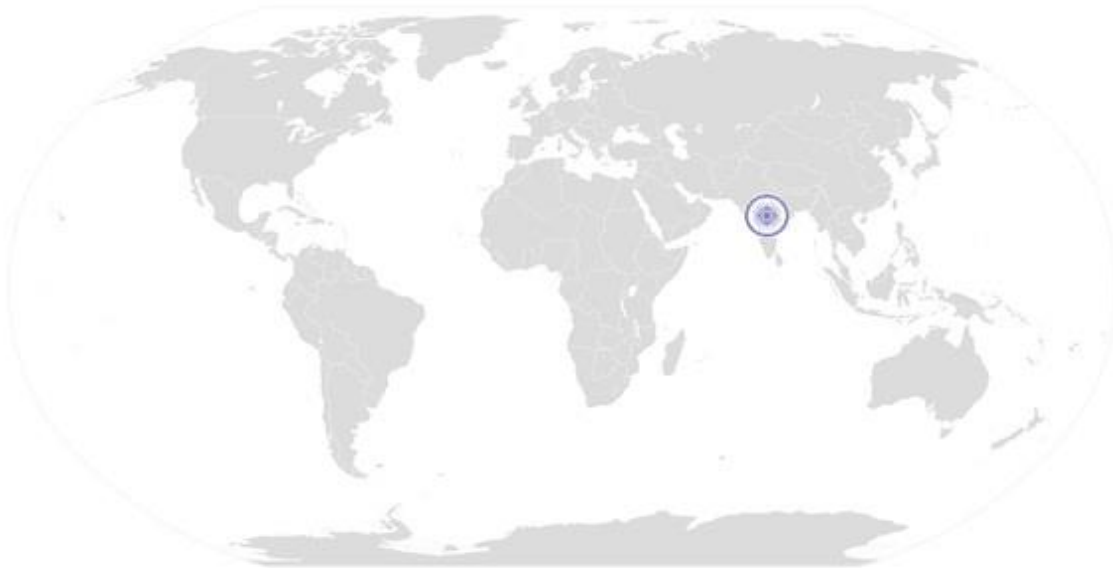
**Perform handset repair - hardware**

	<b>Time Management Skills</b>
	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
	<b>Analytical Skills</b>
	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
	<b>Other Skills</b>
	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>Equipment operating Skills</b>
	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 handset PCB to PC/test equipment for diagnostics SB5. initialize PC based diagnostic tools
<b>B. Professional Skills</b>	<b>Handset repairing skills</b>
	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
	<b>Handset/Component Handling skills</b>
	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

TEL/N2203

**Perform handset repair - hardware**

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



## NOS Version Control:

<b>NOS Code</b>	TEL/N2203		
<b>Credits(NVEQF/NVQF/NSQF) [OPTIONAL]</b>	TBD	<b>Version number</b>	1.0
<b>Industry</b>	Telecom	<b>Drafted on</b>	15/07/13
<b>Industry Sub-sector</b>	Handset Segment	<b>Last reviewed on</b>	26/07/13
		<b>Next review date</b>	31/05/15



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# National Occupational Standard



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## Overview

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

TEL/N2204

**Perform Handset Repair- Software**

National Occupational Standard

<b>Unit Code</b>	TEL/N2204
<b>Unit Title (Task)</b>	Perform handset repair – software
<b>Description</b>	This unit is about carrying out fault rectification related to handset software
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Undertake fault diagnosis</li> <li>• Ensure availability of correct software/software version</li> <li>• Perform software uploading/upgrade</li> <li>• Test handset post repair to ensure optimal performance</li> <li>• Report and document the status at the end of repair activity</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Obtain handsets from customer/ relevant teams</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure faulty handsets are received from customer facing team</p> <p>PC2. obtain/ note fault details as mentioned by the customer facing team and other handset specifications</p> <p>PC1. obtain the committed repair timelines (SLAs)</p> <p>PC2. prioritize repair activities as per guidelines</p>
<b>Determine change requirement</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. undertake fault diagnosis on software components</p> <p>PC2. interpret results and isolate fault</p> <p>PC3. estimate repair timelines</p> <p>PC4. refer the company (handset manufacturer) specific technical database for optimal rectification options</p> <p>PC5. check availability of correct software versions/modules</p>
<b>Arrange for related software, tools and spares</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure clean, dust free and organized working environment</p> <p>PC2. ensure availability of connectors/cables</p> <p>PC3. obtain and ensure all tools are available and diagnostic equipment operational</p> <p>PC4. obtain software required as per organizational procedures</p> <p>PC5. ensure that the software versions are current and ready to use</p>
<b>Undertake repair activities</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. carry out necessary software fault rectification ( correction/Upgradation, software replacement)</p>

TEL/N2204

**Perform Handset Repair- Software**

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

TEL/N2204

**Perform Handset Repair- Software**

	<p>KA4. types of documentation in organization and importance of the same</p> <p>KA5. process for obtaining sign-off post completion of the maintenance activities</p> <p>KA6. knowledge of spare management and repair &amp; return process for faulty equipments</p> <p>KA7. SHE and OHS guidelines and regulations as per company's norms</p> <p>KA8. protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations ) that are required to be used</p> <p>KA9. first aid requirements in case of electrical shocks, cuts and other common injuries</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. functionality, features and basic working of handsets</p> <p>KB2. basic computer knowledge to be able to run diagnostic tools</p> <p>KB3. handset specific operating system, their versions and user interface</p> <p>KB4. functionality of hardware components, software applications, screen, touchpad etc.</p> <p>KB5. functionality of various software jigs</p> <p>KB6. mobile technologies like GSM &amp; CDMA</p> <p>KB7. default setting of handsets and networks</p> <p>KB8. range of handset software related problems and their possible solutions</p> <p>KB9. standard fault-finding (troubleshooting) techniques</p> <p>KB10. standard software testing techniques</p> <p>KB11. standard repairing process</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Reading skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. read and understand technical manuals, work orders and reports</p> <p>SA2. read and understand organizational health and safety instructions</p> <p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. fill up record sheets clearly, concisely and accurately as per company procedures</p> <p><b>Communication Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. clearly communicate relevant information to supervisors</p> <p>SA3. respond appropriately to any queries</p> <p>SA4. communicate with customer/customer facing teams to understand handset performance issues</p> <p>SA5. communicate in the local language</p> <p>SA6. convey proposed solution to the customers</p>



TEL/N2204

**Perform Handset Repair- Software**

<b>B. Professional Skills</b>	<b>Time Management Skills</b>
	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
	<b>Analytical Skills</b>
	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
	<b>Other Skills</b>
	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>Software Skills</b>
	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
	<b>Handset repairing skills</b>
	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
	<b>Toubleshooting Skills</b>
	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

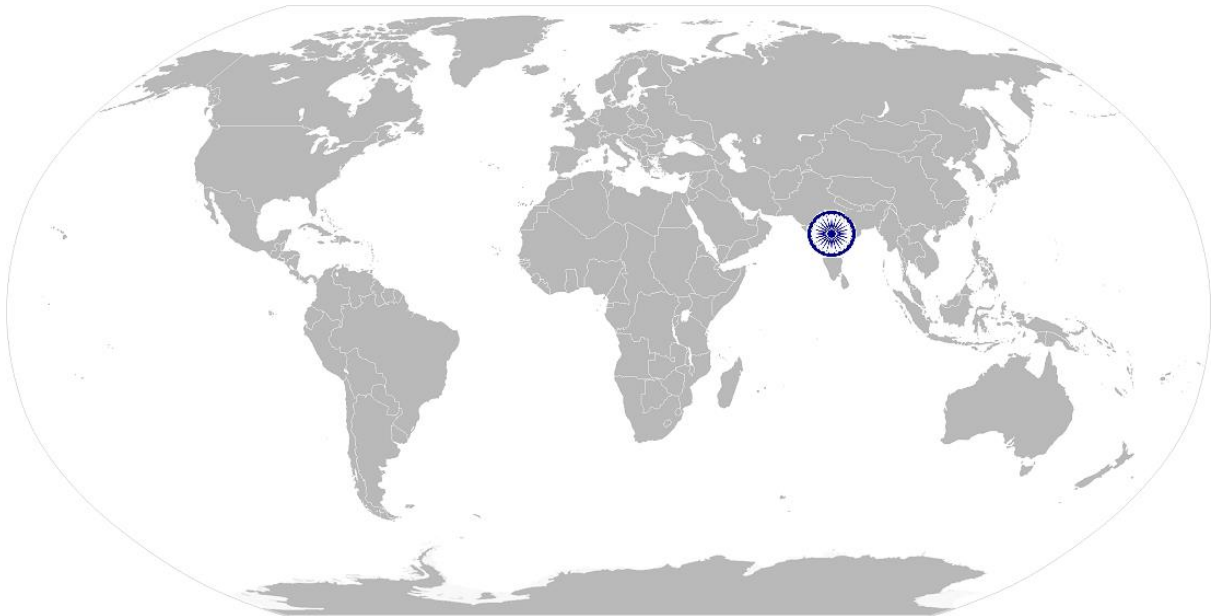
## NOS Version Control

NOS Code	TEL/N2204		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/07/13
Industry Sub-sector	Handset Segment	Last reviewed on	26/07/13
		Next review date	31/05/15



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# National Occupational Standard



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## Overview

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

TEL/N2205

Perform Tablet Repair – Hardware & Software

National Occupational Standard

<b>Unit Code</b>	TEL/N2205
<b>Unit Title (Task)</b>	Tablet Repair – Hardware & Software
<b>Description</b>	This unit is about carrying out repair activities related to tablet hardware & software.
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Undertake fault diagnosis</li> <li>• Identify hardware components to be repaired/replaced</li> <li>• Identify software components to be formatted/reloaded</li> <li>• Perform tablet hardware &amp; software related repair activities</li> <li>• Test tablet post repair activity to ensure optimal performance</li> <li>• Report and document the status at the end of repair activity</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Obtain tablets from customer/relevant teams</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure faulty tablets are received from the customer facing team</p> <p>PC2. obtain/ note fault details as mentioned by the customer facing team and other tablet specifications</p> <p>PC3. obtain the committed repair timelines (SLAs)</p> <p>PC4. prioritize repair activities as per guidelines</p>
<b>Arrange for tools and spares</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure clean, neat, dust free and organized working environment</p> <p>PC2. determine hardware components &amp; software required based on fault diagnosis</p> <p>PC3. obtain hardware &amp; software required( such as components, OS, Applications, testing devices and other inventory) as per organizational procedures</p> <p>PC4. ensure that tools, equipment and testing devices are in proper working condition and calibrated</p> <p>PC5. ensure compliance with lead free soldering techniques</p>
<b>Undertake tablet repair activities</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. refer the company (tablet manufacturer) specific technical database to identify root cause of tablet fault and to determine rectification options</p> <p>PC2. isolate the cause of fault by conducting appropriate hardware/software diagnostic test</p> <p>PC3. determine the options to rectify the fault and confirm with supervisors, if required</p>

**TEL/N2205**

**Perform Tablet Repair – Hardware & Software**

	<p>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.</p>
<p><b>Test effectiveness &amp; close activity</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>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</p>
<p><b>Safety requirements (Equipment &amp; Self)</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>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</p>
<p><b>Report &amp; Record</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>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</p>
<p><b>Knowledge and Understanding (K)</b></p>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>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 &amp; 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</p>

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	<p>KA9. protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations ) that are required to be used</p> <p>KA10. first aid requirements in case of electrical shocks, cuts and other common injuries</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. basic electronics</p> <p>KB2. functional differences between computer, laptop, smartphone, tablet, i-phone and similar devices</p> <p>KB3. types and peculiarities of OS in tablets</p> <p>KB4. types and peculiarities of tablet user interface</p> <p>KB5. basic details and features of Windows and Android OS</p> <p>KB6. functionality of hardware components in a tablet like touchscreen, LCD screen, camera, speakers, PCB etc.</p> <p>KB7. procedure to dismantle and assemble tablet</p> <p>KB8. formatting and installing of OS</p> <p>KB9. drivers and application installation in tablets</p> <p>KB10. range of tools and testing equipment (multi-meter, oscilloscope etc.) available and their functionality</p> <p>KB11. ESD hazards and their effect on electronic components</p> <p>KB12. range of tablet related problems and their possible solutions</p> <p>KB13. standard fault-finding (troubleshooting) techniques</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. fill up record sheets clearly, concisely and accurately as per company procedures</p> <p><b>Reading Skills</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA2. read and understand technical manuals, work orders and reports</p> <p>SA3. read and understand organizational health and safety instructions</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. clearly communicate relevant information to supervisors</p> <p>SA5. respond appropriately to queries</p> <p>SA6. communicate with customer/customer facing teams to understand tablet performance issues</p> <p>SA7. communicate in the local language</p> <p>SA8. convey proposed solution to the customers</p>



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	<b>Time Management Skills</b>
	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
	<b>Analytical Skills</b>
	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
	<b>Other Skills</b>
	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>Equipment Operating Skills</b>
	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
<b>B. Professional Skills</b>	<b>Tablet Repairing Skills</b>
	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
	<b>Tablet Handling Skills</b>
	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

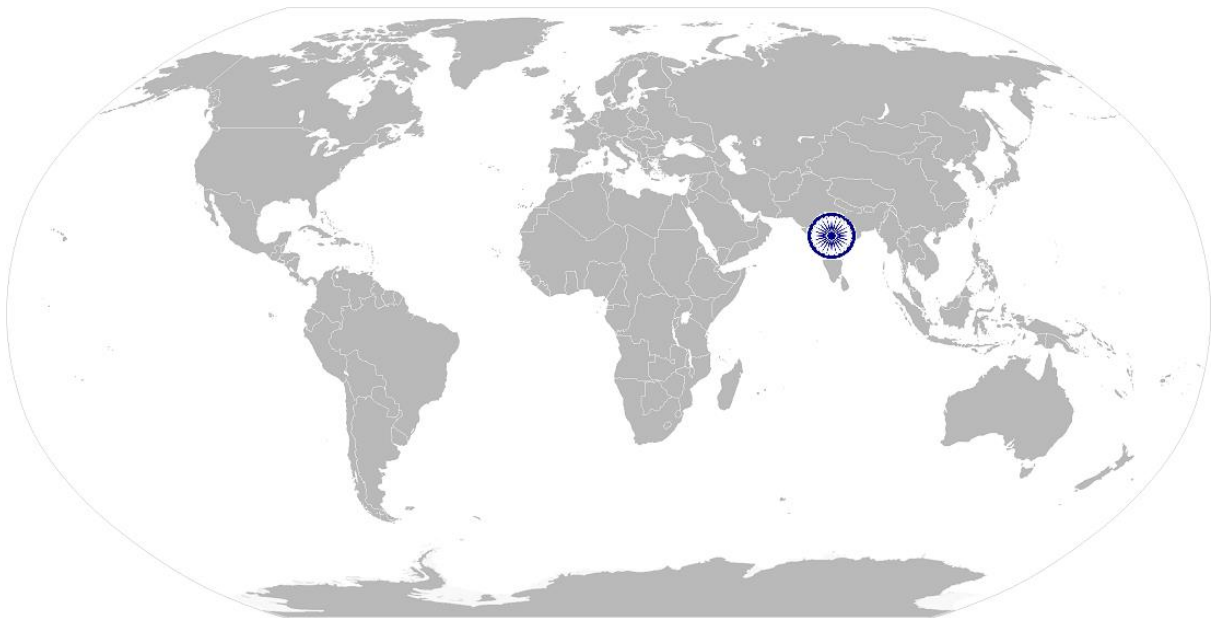




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Troubleshooting Skills	
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"><li>SB17. how to approach a defect</li><li>SB18. make use of standard OEM specified troubleshooting steps</li><li>SB19. interpret intermediate results and progress fault rectification accordingly</li><li>SB20. utilize appropriate tools to rectify faults</li></ul>



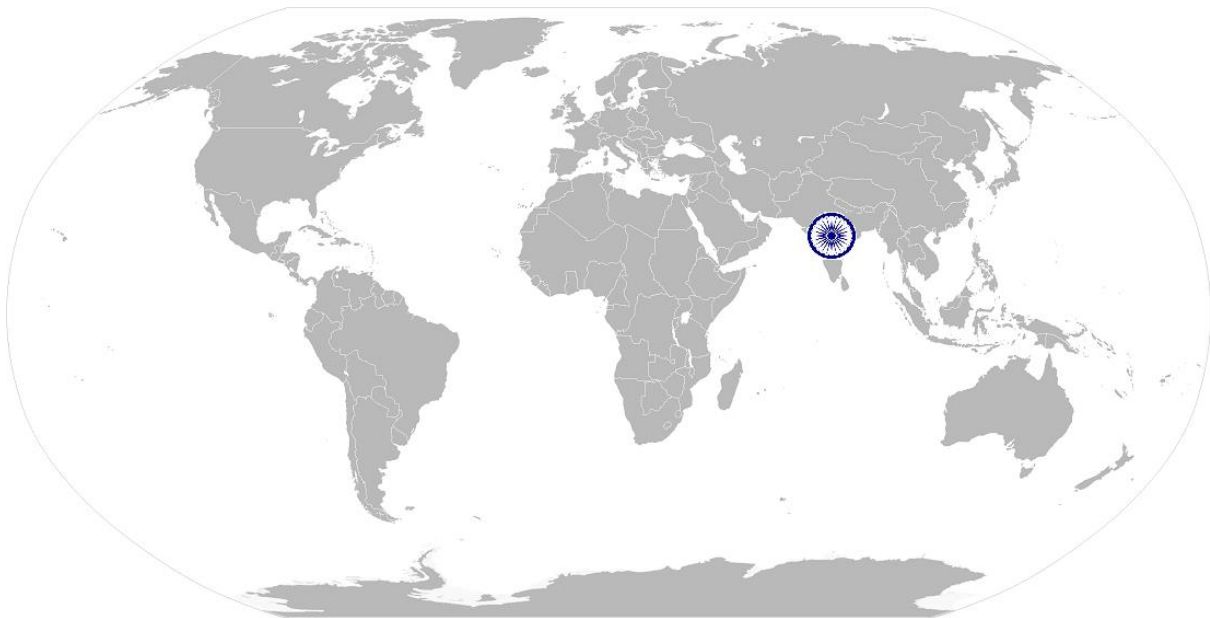


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## NOS Version Control

NOS Code	TEL/N2205		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Telecom	Drafted on	16/09/13
Industry Sub-sector	Handset Segment	Last reviewed on	17/09/13
		Next review date	31/05/15



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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.

NOS Title	Elements	Performance Criteria	Marks Allocation			
			Total Mark (200)	Out Of	Theory	Skills Practical
NOS 11203 (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)				
		PC4. prioritize repair activities as per guidelines				
	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 calibrated
	PC5. ensure compliance with lead free soldering techniques
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
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
Report & Record	PC1. ensure that handset inventory in hand for repairs is tracked and accounted for appropriately as per company procedures

15	15	
45		45
10	10	

		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	
			<b>Total</b>	<b>100</b>	<b>50</b>	<b>50</b>
2. TEL/N2204 (Perform handset repair – software)	Obtain handsets from customer/ relevant teams	PC1. ensure faulty handsets are received from customer facing team	<b>100</b>			
		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				

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