

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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Contents

1. <u>Introduction and Contacts</u>	1
2. <u>Qualifications Pack</u>	2
3. <u>Glossary of Key Terms</u>	3
4. <u>OS Units</u>	5
5. <u>Assessment Criteria</u>	32

Introduction Qualifications Pack – BSS Support Engineer

SECTOR: TELECOM

SUB-SECTOR: Network Managed Services

OCCUPATION: Network Operation & Maintenance

REFERENCE ID: TEL/Q6200

ALIGNED TO: NCO-2015/3114.0601

BSS Support Engineer in the telecom industry is also known as BSS Engineer

Brief Job Description: BSS/ BTS Support engineer is responsible for ensuring network uptime through preventive maintenance of BSC sites and effective fault management in case of fault occurrence. He also assists field engineers in performing their assigned activities at BTS locations.

Personal Attributes: This job requires the individual to work closely with multiple teams and operate on critical telecommunication equipments. He should be able to analyse, interpret data and apply professional judgement to carry out assigned responsibilities.

Job Details	Qualifications Pack Code	TEL/Q6200		
	Job Role	BSS Support Engineer		
	Credits NSQF	TBD	Version number	1.0
	Sector	Telecom	Drafted on	26/04/13
	Sub-sector	Network Managed Services	Last reviewed on	26/05/17
	Occupation	Network Operations and	Maintenance	26/12/20
	NSQC Clearance on	18/06/2015		

Job Role	BSS Support Engineer
Role Description	BSS/ BTS Support engineer is responsible for ensuring network uptime through preventive maintenance of BSC sites and effective fault management in case of fault occurrence. He also assists field engineers in performing their assigned activities at BTS locations.
NSQF level	6
Minimum Educational Qualifications*	Diploma/ Bachelor in Technology (Electronics, Computer Science, IT and related field)
Maximum Educational Qualifications*	Masters in Technology
Training	Technical trainings on BSC and BTS site equipments and software that are to be used to access and work on site equipments
Minimum Job Entry Age	21 Years
Experience	Worked as Field engineer for minimum 2-3 years. Click to open the below hyperlinks
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> 1. TEL/N6200 (Perform preventive maintenance at BSC locations) 2. TEL/N6201 (Perform corrective maintenance/ fault management at BSC locations) 3. TEL/N6202 (Undertake Change management at BSC locations) 4. TEL/N6203 (Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades) <p>Optional:</p> <ol style="list-style-type: none"> 5. NA
Performance Criteria	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.

Keywords /Terms	Description
BSC	Base Station Controller
BSS	Base station subsystem
BTS	Base Transceiver Station
DG Set	Diesel Generator Set
FTP	File Transfer Protocol
GGSN	Gateway GPRS Support Node
GPRS	General Packet Radio Service
HLR	Home Location Register
IF cable	Intermediate frequency cable
MGW	Media Gateway
MML	Man-Machine Language
MSC	Mobile Switching Centre
OHS	Organizational Health & Safety
OSS	Operations Support System
PIU	Power Interface unit
RF cable	Radio Frequency Cable
SDP	Service Delivery Platform
SGSN	Serving GPRS Support Node
SHE	Safety, Health & Environment
SMPS	Switch Mode Power Supply
VSWR	Voltage Standing Wave Ratio

[Back to top...](#)

National Occupational Standard



Overview

This unit is about carrying out preventive maintenance activities at BSC locations to ensure their optimal working

TEL/N6200

Perform preventive maintenance at BSC locations

National Occupational Standard	Unit Code	TEL/N6200
	Unit Title (Task)	Perform preventive maintenance at BSC locations
	Description	This unit is about carrying out preventive maintenance activities at BSC locations to ensure their optimal working
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Plan preventive maintenance schedule for BSC locations in consultation with the NOC team Carry out preventive maintenance activities at BSC site locations Reporting and documenting the status at the end of scheduled activity
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Plan maintenance schedule and notify NOC	To be competent, the user/individual on the job must be able to:
		<p>PC1. obtain network reports from OSS and review network performance on defined parameters</p> <p>PC2. plan the maintenance schedule in coordination with planning team to ensure effective O&M operations</p> <p>PC3. assess the potential impact of the proposed maintenance and plan for possible outage or deferral of maintenance</p> <p>PC4. ensure Network Operating Centre (NOC) is notified prior to undertaking the maintenance activities</p>
		<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)</p> <p>PC2. ensure that equipment specific software like network manager are installed in the laptop device</p> <p>PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process</p> <p>PC4. ensure that faulty equipments are sent to logistics team for repair and replacement</p>
	Arrange for tools and spares	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. conduct standard maintenance activities on periodic basis (monthly, quarterly, half yearly) as per the process</p> <p>PC2. ensure completion of physical maintenance tasks like checking temperatures, routing of Ethernet cables & optical fibers, cable ties, fan working condition, earthing, equipment grouting, distribution of cables at BSC locations</p>
Undertake Maintenance activities	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. conduct standard maintenance activities on periodic basis (monthly, quarterly, half yearly) as per the process</p> <p>PC2. ensure completion of physical maintenance tasks like checking temperatures, routing of Ethernet cables & optical fibers, cable ties, fan working condition, earthing, equipment grouting, distribution of cables at BSC locations</p>	

TEL/N6200

Perform preventive maintenance at BSC locations

	<p>PC3. ensure completion of logical maintenance tasks like checking alarm status, system availability parameters, logical redundancy, BSC configuration back-up</p> <p>PC4. ensure that for 3rd party elements that require maintenance, tickets are raised to the respective vendors by the NOC team</p> <p>PC5. ensure timely escalation of emergency/ unresolved issues according to established Company's procedure</p> <p>PC6. ensure environmental up-keep of sites in coordination with infra engineer and technicians</p>
<p>Test effectiveness & close activity</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team</p> <p>PC2. ensure completion of administrative jobs like site clearance, return of test equipments</p>
<p>Health and Safety</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms</p> <p>PC2. ensure that work is carried out in accordance to the level of competence and legal requirements</p> <p>PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines</p> <p>PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures</p> <p>PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures</p> <p>PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors</p> <p>PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required</p> <p>PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians</p> <p>PC9. ensure availability of first aid box at site</p> <p>PC10. ensure escalation of safety incidents to relevant authorities as per guidelines</p>
<p>Report & Record</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the maintenance activities and the sign-off is obtained from relevant personnel</p> <p>PC2. ensure that documents that are required to be updated are identified</p> <p>PC3. ensure completion of routine maintenance logs, activity logs and spare tracker</p>

TEL/N6200

Perform preventive maintenance at BSC locations

	<p>within stipulated timelines</p> <p>PC4. ensure that documents are available to all appropriate authorities to inspect</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (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. types of documentation in organization and importance of the same</p> <p>KA4. records to be maintained and implications of non-maintenance 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 & 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 bands, anti-static packaging, appropriate insulations) that are required to be used</p> <p>KA9. first aid requirements in case of electrical shocks, cuts, fall from height and other common injuries</p> <p>KA10. electrical and chemical related hazards and precautionary measures</p> <p>KA11. use of safety kit for climbing towers</p> <p>KA12. usage of fire safety equipments</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. functionality of BSC and BTS site equipments like BSC node, Indoor and Outdoor BTS, feeder cables (IF, RF cables), Microwaves (TDM and IP based), Optical fiber</p> <p>KB2. functionality of Passive infrastructure equipments like DG set, PIU panel, Transformer, SMPS, Air Conditioner, Battery bank</p> <p>KB3. transmission media - optical and microwave</p> <p>KB4. login cables (RJ45, RS232, and Hi-Speed USB) for different site equipments</p> <p>KB5. functionality of test equipments like E1 tester, Ethernet tester, VSWR meter</p> <p>KB6. software types and versions of BSC, BTS and other equipments</p> <p>KB7. need and requirement of earthing the equipments</p> <p>KB8. mechanism to maintain the earthing pit to absolute zero</p> <p>KB9. knowledge of using and deploying cable connectors, cable ties and cable tray</p> <p>KB10. BTS O&M software tools like Microwave Link</p> <p>KB11. knowledge of IP based network - IP back-hauling and IP networking</p> <p>KB12. process of logging in the BSC and BTS site equipments</p> <p>KB13. understand and Analyze critical logs from BSC</p> <p>KB14. standard maintenance activities that are performed at Radio site locations</p> <p>KB15. standard fault-finding (troubleshooting) techniques</p>

TEL/N6200

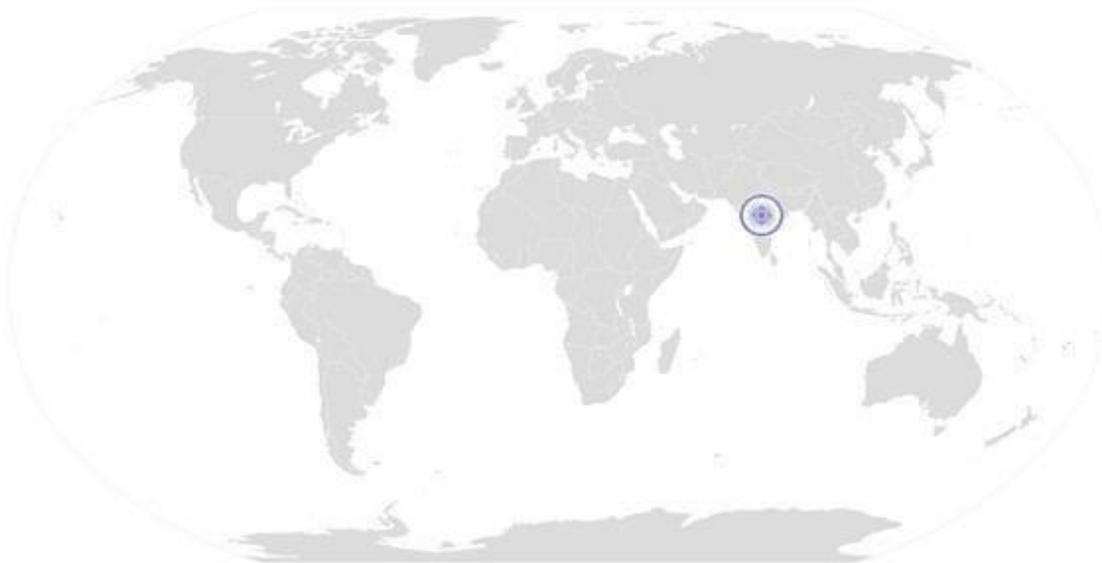
Perform preventive maintenance at BSC locations

Skills (S)	
A. Generic Skills	Communication Skills
	The user/ individual on the job needs to know and understand how to:
	SA1. liaise and coordinate with third party vendors SA2. communicate with supervisor SA3. provide advice and guidance to peers & juniors SA4. communicate in the local language
	Project Management Skills
	The user/individual on the job needs to know and understand how to:
	SA1. prioritize and execute tasks in a high-pressure environment SA2. multi-task by handling multiple tasks and completing them successfully within due timelines SA3. use and maintain resources efficiently and effectively
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to:
	SA5. keep up to date with new technology SA6. interpret reports, readings and numerical data SA7. think through to address complex problems SA8. source technical information by researching enterprise website or manufacturer's technical documentation
	Other Skills
	The user/individual on the job needs to know and understand how to:
SA9. create and maintain effective working relationships and team environment SA10. take initiatives and progressively assume increased responsibilities SA11. share knowledge with other team members and colleagues SA12. effectively resolve disputes and manage disagreements	
B. Professional Skills	Equipment operating Skills
	The user/individual on the job needs to know and understand how to:
	SB1. operate active equipments installed at BSC and BTS sites like BSC, indoor and outdoor BTS, cables, connectors, Microwaves (TDM and IP based), TRX, optical fiber SB2. operate passive infrastructure equipments like DG set, PIU panel, Earthing systems, Transformer, SMPS, Air Conditioner, Battery SB3. operate equipment specific software like network manager SB4. utilize appropriate test and measurement equipments - E1 tester, Ethernet tester, VSWR meter

TEL/N6200

Perform preventive maintenance at BSC locations

	SB5. connect appropriate login cables (RJ45, RS232, Hi-speed USB) to log on to the BSC, BTS site nodes
	SB6. appropriately back-up BSC configuration on periodic basis
	SB7. use appropriate Telnet and FTP commands for file sharing
Technical interpretation Skills	
The user/individual on the job needs to know and understand how to:	
	SB8. interpret VSWR, E1 test results to localize faults and undertake appropriate steps to be rectify the same
	SB9. analyze performance reports and identify instances of deteriorating cell site performance like call drops, effectiveness of call handover among others

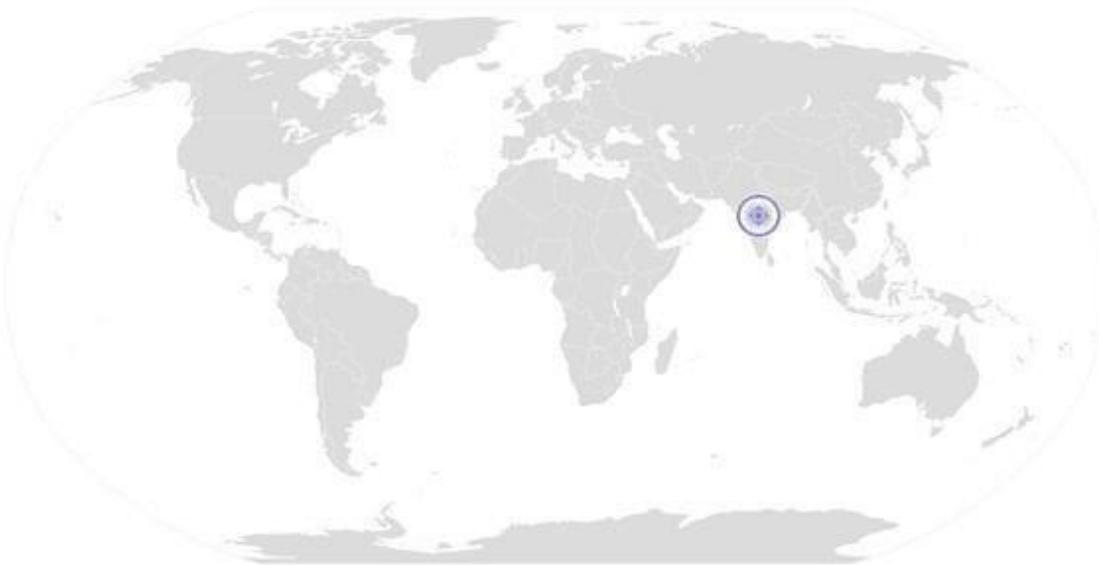


TEL/N6200

Perform preventive maintenance at BSC locations

NOS Version Control

NOS Code	TEL/N6200		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/13
Industry Sub-sector	Network Managed Services	Last reviewed on	26/05/17
		Next review date	26/12/20

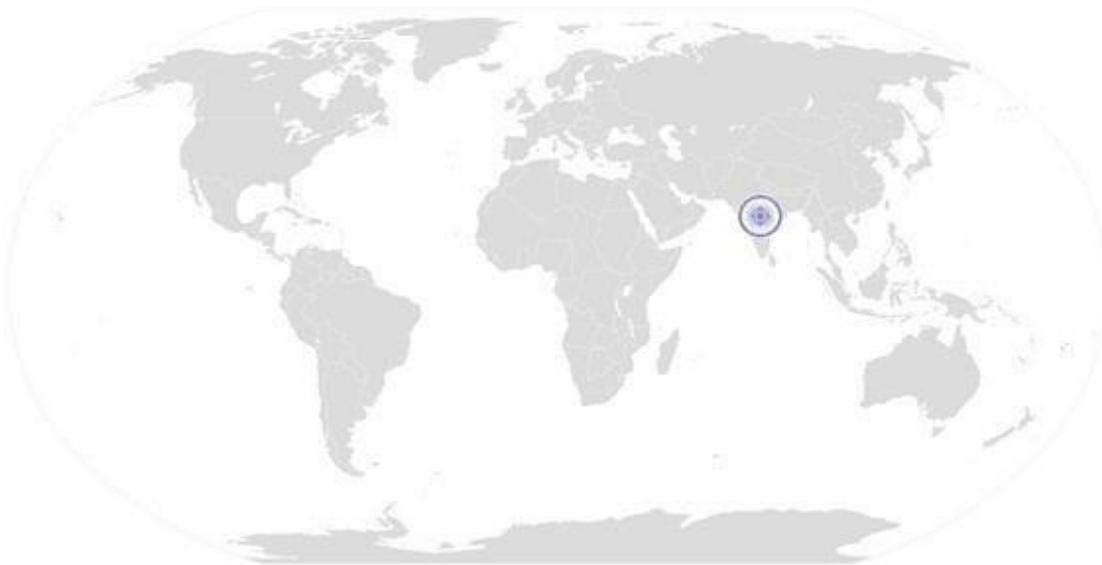


[Back to QP](#)

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

National Occupational Standard



Overview

This unit is about carrying out corrective maintenance/ fault management activities at BSC locations to ensure their optimal working

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

National Occupational Standard	Unit Code	TEL/N6201
	Unit Title (Task)	Perform corrective maintenance/ fault management at BSC locations
	Description	This unit is about carrying out corrective maintenance/ fault management activities at BSC locations to ensure their optimal working
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Ensure timely response to the network alarms/ trouble tickets in consultation with NOC team • Carry out diagnostic tests at site location and identify root cause of fault • Rectify fault condition or escalate in case additional technical support is required • Reporting and documenting the status of the activity
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
Respond to Network Alarm	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. obtain alarm information from the NOC team and determine alarm severity, SLAs and the affected network elements</p> <p>PC2. ensure understanding of nature of alarm, and provide information to/ seek advice from relevant parties to identify the problem and root-cause of the alarm</p> <p>PC3. prioritize actioning on alarms based on fault's service impact analysis</p>	
Arrange for tools and spares	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)</p> <p>PC2. ensure that equipment specific software like network manager are installed in the laptop device</p> <p>PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process</p> <p>PC4. ensure that faulty equipments are sent to logistics team for repair and replacement</p>	
Fault identification & rectification	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. coordinate with Infra engineer/ technicians for rectification if the fault is due to passive infrastructure</p> <p>PC2. ensure login to BSS nodes, IDU (for microwave) using appropriate systems and determine fault details based on alarm/ other indicators</p> <p>PC3. ensure necessary diagnostic tests (hardware related) are carried out to identify</p>	

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

	<p>the root cause of the alarm</p> <p>PC4. determine the options to rectify the fault and confirm with supervisors if required</p> <p>PC5. ensure rectification of network problem/ fault within the alarmSLAs and monitor the activities performed by the Infra engineer and technicians</p> <p>PC6. ensure compliance to enterprise policy while escalating unresolved faults/ instances of delays</p>
<p>Test effectiveness & close activity</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team</p> <p>PC2. ensure completion of administrative jobs like site clearance, return of test equipments</p>
<p>Health and Safety</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms</p> <p>PC2. ensure that work is carried out in accordance to the level of competence and legal requirements</p> <p>PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines</p> <p>PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures</p> <p>PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures</p> <p>PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors</p> <p>PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required</p> <p>PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians</p> <p>PC9. ensure availability of first aid box at site</p> <p>PC10. ensure escalation of safety incidents to relevant authorities as per guidelines</p>
<p>Report & Record</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the fault management activities and the sign-off is obtained</p> <p>PC2. ensure that documents that are required to be updated are identified</p> <p>PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines</p> <p>PC4. ensure that documents are available to all appropriate authorities to inspect</p>

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> 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. types of documentation in organization and importance of the same KA4. records to be maintained and implications of non-maintenance 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 bands, anti-static packaging, appropriate insulations) that are required to be used KA9. first aid requirements in case of electrical shocks, cuts, fall from height and other common injuries KA10. electrical and chemical related hazards and precautionary measures KA11. use of safety kit for climbing towers KA12. usage of fire safety equipments
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. functionality of BSC and BTS site equipments like BSC node, Indoor and Outdoor BTS, feeder cables (IF, RF cables), Microwaves (TDM and IP based), Optical fiber KB2. functionality of Passive infrastructure equipments like DG set, PIU panel, Transformer, SMPS, Air Conditioner, Battery bank KB3. transmission media - optical and microwave KB4. login cables (RJ45, RS232, and Hi-Speed USB) for different site equipments KB5. functionality of test equipments like E1 tester, Ethernet tester, VSWR meter KB6. software types and versions of BSC, BTS and other equipments KB7. need and requirement of earthing the equipments KB8. mechanism to maintain the earthing pit to absolute zero KB9. knowledge of using and deploying cable connectors, cable ties and cable tray KB10. BTS O&M software tools like Microwave Link KB11. knowledge of IP based network - IP back-hauling and IP networking KB12. process of logging in the BSC and BTS site equipments KB13. understand and Analyze critical logs from BSC KB14. standard fault-finding (troubleshooting) techniques KB15. implications for non response to tickets within defined SLAs
Skills (S)	
<p>A. Core Skills/</p>	<p>Communication Skills</p>

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

Generic Skills	The user/ individual on the job needs to know and understand how to:
	<ul style="list-style-type: none"> SA1. liaise and coordinate with third party vendors SA2. communicate with supervisor SA3. provide advice and guidance to peers & juniors SA4. communicate in the local language
	Project Management Skills
	The user/individual on the job needs to know and understand how to:
	<ul style="list-style-type: none"> SA5. prioritize and execute tasks in a high-pressure environment SA6. multi-task by handling multiple tasks and completing them successfully within due timelines SA7. use and maintain resources efficiently and effectively
Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to:
	<ul style="list-style-type: none"> SA8. keep up to date with new technology SA9. interpret reports, readings and numerical data SA10. think through to address complex problems SA11. source technical information by researching enterprise website or manufacturer's technical documentation
	Other Skills
	The user/individual on the job needs to know and understand how to:
B. Professional Skills	Equipment operating Skills
	The user/individual on the job needs to know and understand how to:
<ul style="list-style-type: none"> SB1. operate active equipments installed at BSC and BTS sites like BSC, indoor and outdoor BTS, cables, connectors, Microwaves (TDM and IP based), TRX, optical fiber SB2. operate passive infrastructure equipments like DG set, PIU panel, Earthing systems, Transformer, SMPS, Air Conditioner, Battery SB3. operate equipment specific software like network manager SB4. utilize appropriate test and measurement equipments - E1 tester, Ethernet tester, VSWR meter SB5. connect appropriate login cables (RJ45, RS232, Hi-speed USB) to log on to the BSC, BTS site nodes 	

TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

	SB6. appropriately back-up BSC configuration on periodic basis
	SB7. use appropriate Telnet and FTP protocols
	Technical interpretation Skills
	The user/individual on the job needs to know and understand how to:
	SB8. interpret VSWR, E1 test results to localize faults and undertake appropriate steps to be rectify the same
SB9. analyze performance reports and identify instances of deteriorating cell site performance like call drops, effectiveness of call handover among others	
SB10. analyze service impact of the fault to prioritize actioning on alarms	
Problem solving skills	
The user/individual on the job needs to know and understand how to:	
SB11. troubleshoot common equipment and network related problems	
SB12. utilize appropriate tools and commands to rectify faults	
SB13. utilize appropriate communication channels to escalate unresolved problems to relevant personnel	

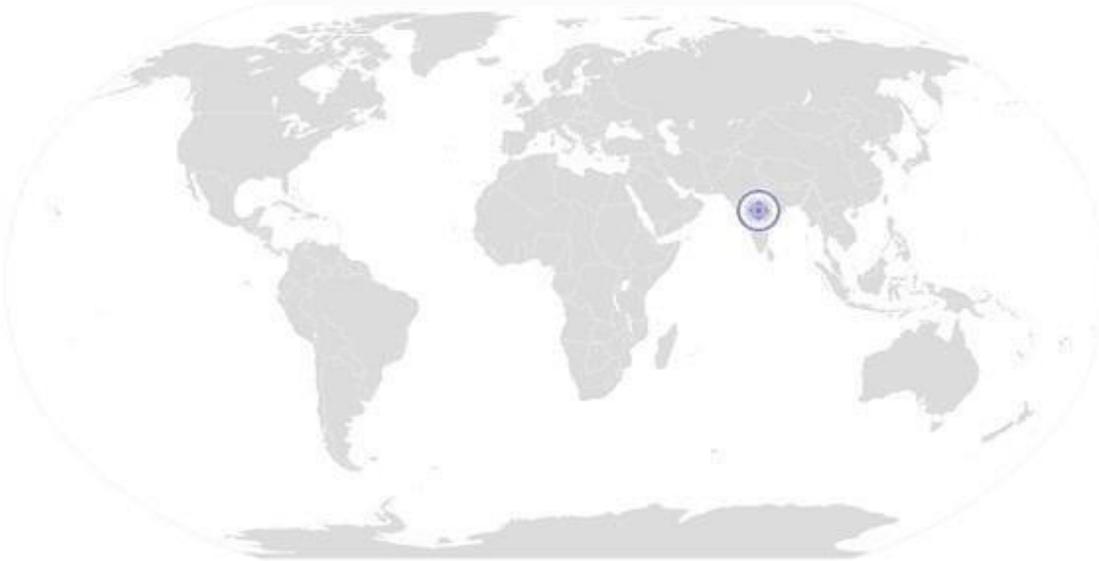


TEL/N6201

Perform corrective maintenance/ fault management at BSC locations

NOS Version Control

NOS Code	TEL/N6201		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/13
Industry Sub-sector	Network Managed Services	Last reviewed on	29/04/15
		Next review date	31/05/17



[Back to QP](#)

National Occupational Standard



Overview

This unit is about carrying out change management activities (System upgrade/ Site capacity augmentation/ Physical optimization) at BSC locations

TEL/N6202

Perform Change management activities at BSC locations

National Occupational Standard	Unit Code	TEL/N6202
	Unit Title (Task)	Perform Change management activities at BSC locations
	Description	This unit is about carrying out change management activities (System upgrade/ Site capacity augmentation/ Physical optimization) at BSC locations
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Ensure timely response to the change work orders • Implement change work order and test effectiveness of change • Reporting and documenting the status
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Determine change requirement	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. receive change requests (hardware upgrade, software upgrade, capacity augmentation, configuration changes) from the NOC team or supervisors</p> <p>PC2. Identify criticality, and timelines for carrying out the changes</p> <p>PC3. develop work plan and identify dependencies if any</p> <p>PC4. assess the potential impact of the proposed activity and plan for possible outage condition or deferral of the activity</p> <p>PC5. ensure customer is informed and an approval is obtained in case of service impacting change activity</p> <p>PC6. ensure that Network Operating Centre (NOC) is notified prior to undertaking the activities</p>
	Arrange for tools and spares	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)</p> <p>PC2. ensure that equipment specific software like network manager are installed in the laptop device</p> <p>PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process</p> <p>PC4. ensure that faulty equipments are sent to logistics team for repair and replacement</p>
	Carry out change and perform post change monitoring	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. implement changes like system/ software upgrade with global releases, capacity augmentation, configuration changes, migration, re-homing of BTS,</p>

TEL/N6202

Perform Change management activities at BSC locations

	<p>LAC (Location Area Code) split</p> <p>PC2. ensure completion of the requested change task as per requestor's requirement</p> <p>PC3. ensure continuous monitoring of progress of change and notify change requestor of problems encountered if any</p> <p>PC4. abort change and implement contingency plan should the change activity leads to major service disruption</p> <p>PC5. ensure compliance with the defined SLA for carrying out changes</p>
<p>Obtain back-up, test effectiveness & close activity</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. obtain back-up of BSC configuration both pre and post performance of change activities</p> <p>PC2. confirm effectiveness of the change process, by monitoring site's alarm status in co-ordination with the NOC team</p> <p>PC3. ensure completion of administrative jobs like site clearance, return of test equipments</p>
<p>Health and Safety</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms</p> <p>PC2. ensure that work is carried out in accordance to the level of competence and legal requirements</p> <p>PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines</p> <p>PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures</p> <p>PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures</p> <p>PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors</p> <p>PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required</p> <p>PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians</p> <p>PC9. ensure availability of first aid box at site</p> <p>PC10. ensure escalation of safety incidents to relevant authorities as per guidelines</p>
<p>Report & Record</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the change management activities and sign-off is obtained from relevant personnel</p>

TEL/N6202

Perform Change management activities at BSC locations

	<p>PC2. ensure that documents that are required to be updated are identified</p> <p>PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines</p> <p>PC4. ensure that documents are available to all appropriate authorities to inspect</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA13. risk and impact of not following defined procedures/work instructions</p> <p>KA14. escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures ,fire and power failures</p> <p>KA15. types of documentation in organization and importance of the same</p> <p>KA16. records to be maintained and implications of non-maintenance of the same</p> <p>KA17. process for obtaining sign-off post completion of the maintenance activities</p> <p>KA18. knowledge of spare management and repair & return process for faulty equipments</p> <p>KA19. SHE and OHS guidelines and regulations as per company’s norms</p> <p>KA20. protection equipments (anti-static bands, anti-static packaging, appropriate insulations) that are required to be used</p> <p>KA21. first aid requirements in case of electrical shocks, cuts, fall from height and other common injuries</p> <p>KA22. electrical and chemical related hazards and precautionary measures</p> <p>KA23. use of safety kit for climbing towers</p> <p>KA24. usage of fire safety equipments</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. functionality of BSC and BTS site equipments like BSC node, Indoor and Outdoor BTS, feeder cables (IF, RF cables), Microwaves (TDM and IP based), Optical fiber</p> <p>KB2. functionality of Passive infrastructure equipments like DG set, PIU panel, Transformer, SMPS, Air Conditioner, Battery bank</p> <p>KB3. transmission media - optical and microwave</p> <p>KB4. login cables (RJ45, RS232, and Hi-Speed USB) for different site equipments</p> <p>KB5. functionality of test equipments like E1 tester, Ethernet tester, VSWR meter</p> <p>KB6. software types and versions of BSC, BTS and other equipments</p> <p>KB7. need and requirement of earthing the equipments</p> <p>KB8. mechanism to maintain the earthing pit to absolute zero</p> <p>KB9. knowledge of using and deploying cable connectors, cable ties and cable tray</p> <p>KB10. BTS O&M software tools like Microwave Link</p> <p>KB11. knowledge of IP based network - IP back-hauling and IP networking</p> <p>KB12. process of logging in the BSC and BTS site equipments</p> <p>KB13. understand and Analyze critical logs from BSC</p> <p>KB14. standard fault-finding (troubleshooting) techniques</p>

TEL/N6202

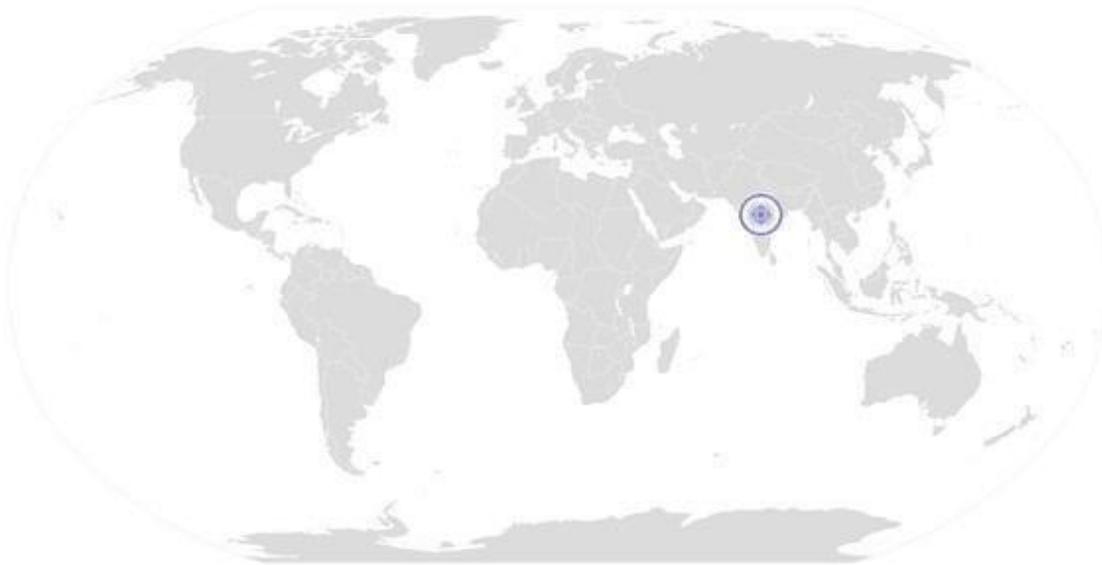
Perform Change management activities at BSC locations

Skills (S)	
A. Core Skills/ Generic Skills	Communication Skills
	The user/ individual on the job needs to know and understand how to:
	SA1. liaise and coordinate with third party vendors SA2. communicate with supervisor SA3. provide advice and guidance to peers & juniors SA4. communicate in the local language
	Project Management Skills
	The user/individual on the job needs to know and understand how to:
	SA5. prioritize and execute tasks in a high-pressure environment SA6. multi-task by handling multiple tasks and completing them successfully within due timelines SA7. use and maintain resources efficiently and effectively
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to:
	SA8. keep up to date with new technology SA9. interpret reports, readings and numerical data SA10. think through to address complex problems SA11. source technical information by researching enterprise website or manufacturer's technical documentation
	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 SA13. take initiatives and progressively assume increased responsibilities SA14. share knowledge with other team members and colleagues SA15. effectively resolve disputes and manage disagreements	
B. Professional Skills	Equipment operating Skills
	The user/individual on the job needs to know and understand how to:
B. Professional Skills	SB1. operate active equipments installed at BSC and BTS sites like BSC, indoor and outdoor BTS, cables, connectors, Microwaves (TDM and IP based), TRX, optical fiber SB2. operate passive infrastructure equipments like DG set, PIU panel, Earthing systems, Transformer, SMPS, Air Conditioner, Battery SB3. operate equipment specific software like network manager SB4. utilize appropriate test and measurement equipments - E1 tester, Ethernet tester, VSWR meter

TEL/N6202

Perform Change management activities at BSC locations

	SB5. connect appropriate login cables (RJ45, RS232, Hi-speed USB) to log on to the BSC, BTS site nodes
	SB6. appropriately back-up BSC configuration on periodic basis
	SB7. use appropriate Telnet and FTP protocols
Technical interpretation Skills	
The user/individual on the job needs to know and understand how to:	
	SB8. interpret VSWR, E1 test results to localize and identify root cause of faults
	SB9. analyze performance reports and identify instances of deteriorating cell site performance like call drops, effectiveness of call handover among others
	SB10. analyze the impact on the network due to the activity and develop appropriate plans



TEL/N6202

Perform Change management activities at BSC locations

NOS Version Control

NOS Code	TEL/N6202		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/13
Industry Sub-sector	Network Managed Services	Last reviewed on	29/04/15
		Next review date	31/05/17



[Back to QP](#)

TEL/N6203

Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades

National Occupational Standard



Overview

This unit is about analyzing BSS performance reports, alarm trends, customer complaints and suggesting specific maintenance activities to field team. Also, assist field team in handling critical faults and upgrade activities

TEL/N6203

Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades

National Occupational Standard	Unit Code	TEL/N6203
	Unit Title (Task)	Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades
	Description	This unit is about analyzing BSS performance reports, alarm trends, customer complaints and suggesting specific maintenance activities to field team. Also, assist field team in handling critical faults and upgrade activities
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Analysis of BSS performance reports and customer complaints pertaining to BSS • Identify key trends (like repetitive alarms, false alarms, high site temperatures) • Suggest to field team for undertaking monitoring/ maintenance activities • Interact with Infra engineers for rectification of Infra alarms • Assist field engineers during emergency/ critical faults
Performance Criteria (PC) w.r.t. the Scope		
	Element	Performance Criteria
	Analyze BSS performance reports, BSS alarm details	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. obtain network reports from OSS and review network performance on defined parameters</p> <p>PC2. analyze reports for software error bugs, high temperature sites, SD block, TCH block and adherence to other performance KPIs</p> <p>PC3. collect and analyze various logs like computer logs, black box logs from BSC</p> <p>PC4. ensure root cause analysis is undertaken for all faults related to BSS</p> <p>PC5. ensure tracking of false alarms records and co-ordinate for rectification of the same</p> <p>PC6. perform real time analysis of alarms to support field team in troubleshooting</p> <p>PC7. analyze alarm communication records to ensure that all the alarms are informed to field team with minimum delay</p>
	Analyze customer complaints	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. ensure customer complaints pertaining to BSS are resolved within defined timelines</p> <p>PC2. escalate unresolved complaints/ instances of delay in resolution as per Company's policy</p>
	Suggest actions to BSS field teams and assist in service delivery	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. suggest specific maintenance activities to field team to ensure the identified network or customer related issues are addressed</p>

TEL/N6203

Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades

<p>PC2. ensure timely completion of activities by monitoring performance of the field</p>	<p>teams</p> <p>PC3. assist field team in troubleshooting during maintenance and fault correction activities</p> <p>PC4. ensure coordination with Infra engineers in case of infra related alarms/ faults</p> <p>PC5. ensure periodic communication between zonal teams to facilitate sharing of good practices, typical alarm details of each zone</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (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. types of documentation in organization and importance of the same</p> <p>KA4. records to be maintained and implications of non-maintenance 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 & 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 bands, anti-static packaging, appropriate insulations) that are required to be used</p> <p>KA9. first aid requirements in case of electrical shocks, cuts, fall from height and other common injuries</p> <p>KA10. electrical and chemical related hazards and precautionary measures</p> <p>KA11. use of safety kit for climbing towers</p> <p>KA12. usage of fire safety equipments</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. functionality of BSC and BTS site equipments like BSC node, Indoor and Outdoor BTS, feeder cables (IF, RF cables), Microwaves (TDM and IP based), Optical fiber</p> <p>KB2. functionality of Passive infrastructure equipments like DG set, PIU panel, Transformer, SMPS, Air Conditioner, Battery bank</p> <p>KB3. transmission media - optical and microwave</p> <p>KB4. login cables (RJ45, RS232, and Hi-Speed USB) for different site equipments</p> <p>KB5. functionality of test equipments like E1 tester, Ethernet tester, VSWR meter</p> <p>KB6. software types and versions of BSC, BTS and other equipments</p> <p>KB7. need and requirement of earthing the equipments</p> <p>KB8. mechanism to maintain the earthing pit to absolute zero</p> <p>KB9. knowledge of using and deploying cable connectors, cable ties and cable tray</p> <p>KB10. BTS O&M software tools like Microwave Link</p> <p>KB11. knowledge of IP based network - IP back-hauling and IP networking</p>

TEL/N6203

Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades

	<p>KB12. process of logging in the BSC and BTS site equipments</p> <p>KB13. understand and Analyze critical logs from BSC</p> <p>KB14. standard fault-finding (troubleshooting) techniques</p>
Skills (S)	
A. Core Skills/ Generic Skills	Communication Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. liaise and coordinate with third party vendors</p> <p>SA2. communicate with supervisor</p> <p>SA3. provide advice and guidance to peers & juniors</p> <p>SA4. communicate in the local language</p>
	Project Management Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. prioritize and execute tasks in a high-pressure environment</p> <p>SA6. multi-task by handling multiple tasks and completing them successfully within due timelines</p> <p>SA7. use and maintain resources efficiently and effectively</p>
	Analytical Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. keep up to date with new technology</p> <p>SA9. interpret reports, readings and numerical data</p> <p>SA10. think through to address complex problems</p> <p>SA11. source technical information by researching enterprise website or manufacturer's technical documentation</p>
	Other Skills
<p>The user/individual on the job needs to know and understand how to:</p> <p>SA12. create and maintain effective working relationships and team environment</p> <p>SA13. take initiatives and progressively assume increased responsibilities</p> <p>SA14. share knowledge with other team members and colleagues</p> <p>SA15. effectively resolve disputes and manage disagreements</p>	
B. Professional Skills	<p style="background-color: #d9e1f2;">Equipment operating Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. operate active equipments installed at BSC and BTS sites like BSC, indoor and</p>

TEL/N6203

Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades

	<p>outdoor BTS, cables, connectors, Microwaves (TDM and IP based), optical fiber</p> <p>SB2. operate passive infrastructure equipments like DG set, PIU panel, Earthing systems, Transformer, SMPS, Air Conditioner, Battery</p> <p>SB3. operate equipment specific software like network manager</p> <p>SB4. utilize appropriate test and measurement equipments - E1 tester, Ethernet tester, VSWR meter</p> <p>SB5. connect appropriate login cables (RJ45, RS232, Hi-speed USB) to log on to the BSC, BTS site nodes</p> <p>SB6. appropriately back-up BSC configuration on periodic basis</p> <p>SB7. use appropriate Telnet and FTP protocols</p>
	<p>Technical interpretation Skills</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. interpret VSWR, E1 test results to localize and identify root cause of faults</p> <p>SB9. analyze performance reports and identify instances of deteriorating cell site performance like call drops, effectiveness of call handover among others</p>
	<p>Problem solving skills</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. troubleshoot common service affecting and non-service affecting equipment and network related problems</p> <p>SB11. utilize appropriate tools and commands to rectify faults</p> <p>SB12. utilize appropriate communication channels to escalate unresolved problems to relevant personnel</p>

NOS Version Control

NOS Code	TEL/N6203		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/13
Industry Sub-sector	Network Managed Services	Last reviewed on	29/04/15
		Next review date	31/05/17



TEL/Q6200

Qualification Pack for BSS Engineer

Criteria for Assessing Trainee

Job Role : BSS Engineer
Qualification Pack : TEL/Q6200
Sector Skill Council : Telecom

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 and skill practical part for each candidate at each examination/training center.
4. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.
6. 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.

Assessable Outcome		Assessment Criteria	Total Mark (400)	Total of Sub-Element	Out Of	Theory	Skills Practical
1. TEL/N6200 (Perform preventive maintenance at BSC locations)	Plan maintenance schedule and notify NOC	PC1. obtain network reports from OSS and review network performance on defined parameters	100	18	5	5	0
		PC2. plan the maintenance schedule in coordination with planning team to ensure effective O&M operations			6	0	6
		PC3. assess the potential impact of the proposed maintenance and plan for possible outage or deferral of maintenance			4	0	4
		PC4. ensure Network Operating Centre (NOC) is notified prior to undertaking the maintenance activities.			3	3	0
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)		10	2	0	2
		PC2. ensure that equipment specific software like network manager are installed in the laptop device.			2	0	2
		PC3. ensure availability of spare hardware equipments and raise request for spares,			3	0	3
		PC4. ensure that faulty equipments are sent to logistics team for repair and replacement			3	0	3
	Undertake Maintenance activities	PC1. conduct standard maintenance activities on periodic basis (monthly, quarterly, half yearly) as per the process		30	4	0	4
		PC2. ensure completion of physical maintenance tasks like checking temperatures, routing of Ethernet cables & optical fibers, cable ties, fan working condition, earthing, equipment grounding, distribution of cables at BSC locations			6	0	6
		PC3. ensure completion of logical maintenance tasks like checking alarm status, system availability parameters, logical redundancy, BSC configuration back-up			8	0	8
		PC4. ensure that for 3rd party elements that			4	4	0

TEL/Q6200

Qualification Pack for BSS Engineer

	require maintenance, tickets are raised to the respective vendors by the NOC team				
	PC5. ensure timely escalation of emergency/ unresolved issues according to established Company's procedure		4	4	0
	PC6. ensure environmental up-keep of sites in coordination with infra engineer and technicians		4	0	4
Test effectiveness & close activity	PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team	5	3	0	3
	PC2. ensure completion of administrative jobs like site clearance, return of test equipments		2	0	2
Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	25	2	2	0
	PC2. ensure that work is carried out in accordance to the level of competence and legal requirements		2	0	2
	PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines		4	2	2
	PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures		5	0	5
	PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures		1	0	1
	PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors		2	0	2
	PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required		4	2	2
	PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians		2	0	2
	PC9. ensure availability of first aid box at site		1	0	1
	PC10. ensure escalation of safety incidents to relevant authorities as per guidelines		2	2	0
Report & Record	PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the maintenance activities and the sign-off is obtained from relevant personnel	12	2	2	0
	PC2. ensure that documents that are required to be updated are identified		4	0	4
	PC3. ensure completion of routine		4	2	2

TEL/Q6200

Qualification Pack for BSS Engineer

		maintenance logs, activity logs and spare tracker						
		PC4. ensure that documents are available to all appropriate authorities to inspect			2	2	0	
					100	30	70	
2. TEL/N6201 (Perform corrective maintenance/fault management at BSC locations)	Respond to Network Alarm	PC1. obtain alarm information from the NOC team and determine alarm severity, SLAs and the affected network elements		100	20	7	2	5
		PC2. ensure understanding of nature of alarm, and provide information to/ seek advice from relevant parties to identify the problem and root-cause of the alarm				10	4	6
		PC3. prioritize actioning on alarms based on fault's service impact analysis				3	1	2
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)			8	2	0	2
		PC2. ensure that equipment specific software like network manager are installed in the laptop device				2	0	2
		PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process				2	0	2
		PC4. ensure that faulty equipments are sent to logistics team for repair and replacement				2	0	2
	Fault identification & rectification	PC1. coordinate with Infra engineer/ technicians for rectification if the fault is due to passive infrastructure			25	5	0	5
		PC2. ensure login to BSS nodes, IDU (for microwave) using appropriate systems and determine fault details based on alarm/ other indicators				4	0	4
		PC3. ensure necessary diagnostic tests (hardware related) are carried out to identify the root cause of the alarm				8	4	4
		PC4. determine the options to rectify the fault and confirm with supervisors if required				4	0	4
		PC5. ensure rectification of network problem/ fault within the alarm SLAs and monitor the activities performed by the Infra engineer and technicians				2	0	2
		PC6. ensure compliance to enterprise policy while escalating unresolved faults/ instances of delays				2	0	2
	Test effectiveness & close activity	PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team			10	5	0	5
		PC2. ensure completion of administrative jobs like site clearance, return of test equipments				5	0	5

TEL/Q6200

Qualification Pack for BSS Engineer

Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms			2	2	0	
	PC2. ensure that work is carried out in accordance to the level of competence and legal requirements			2	0	2	
	PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines			4	2	2	
	PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures			5	0	5	
	PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures		25	1	0	1	
	PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors			2	0	2	
	PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required			4	2	2	
	PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians			2	0	2	
	PC9. ensure availability of first aid box at site			1	0	1	
	PC10. ensure escalation of safety incidents to relevant authorities as per guidelines			2	2	0	
Report & Record	PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the fault management activities and the sign-off is obtained			2	2	0	
	PC2. ensure that documents that are required to be updated are identified			4	0	4	
	PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines		12	4	2	2	
	PC4. ensure that documents are available to all appropriate authorities to inspect			2	2	0	
				100	25	75	
3. TEL/N6202 (Undertake Change management at BSC locations)	Determine change requirement	PC1. receive change requests (hardware upgrade, software upgrade, capacity augmentation, configuration changes) from the NOC team or supervisors	100	25	4	2	2
		PC2. identify criticality, and timelines for carrying out the changes			6	2	4
		PC3. develop work plan and identify dependencies if any			4	0	4

TEL/Q6200

Qualification Pack for BSS Engineer

	PC4. assess the potential impact of the proposed activity and plan for possible outage condition or deferral of the activity		4	0	4
	PC5. ensure customer is informed and an approval is obtained in case of service impacting change activity		4	0	4
	PC6. ensure that Network Operating Centre (NOC) is notified prior to undertaking the activities		3	0	3
Arrange for tools and spare	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)	10	2	0	2
	PC2. ensure that equipment specific software like network manager are installed in the laptop device		2	0	2
	PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process		3	0	3
	PC4. ensure that faulty equipments are sent to logistics team for repair and replacement		3	0	3
Carry out change and perform post change monitoring	PC1. implement changes like system/ software upgrade with global releases, capacity augmentation, configuration changes, migration, re-homing of BTS, LAC (Location Area Code) split	22	10	4	6
	PC2. ensure completion of the requested change task as per requestor's requirement		2	0	2
	PC3. ensure continuous monitoring of progress of change and notify change requestor of problems encountered if any		3	0	3
	PC4. abort change and implement contingency plan should the change activity leads to major service disruption		4	0	4
	PC5. ensure compliance with the defined SLA for carrying out changes		3	0	3
Obtain back-up, test effectiveness & close activity	PC1. obtain back-up of BSC configuration both pre and post performance of change activities	6	3	3	0
	PC2. confirm effectiveness of the change process, by monitoring site's alarm status in co-ordination with the NOC team		2	0	2
	PC3. ensure completion of administrative jobs like site clearance, return of test equipments		1	0	1
Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	25	2	2	0
	PC2. ensure that work is carried out in accordance to the level of competence and legal requirements		2	0	2

TEL/Q6200

Qualification Pack for BSS Engineer

		PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines			4	2	2
		PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures			5	0	5
		PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures			1	0	1
		PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors			2	0	2
		PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required			4	2	2
		PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians			2	0	2
		PC9. ensure availability of first aid box at site			1	0	1
		PC10. ensure escalation of safety incidents to relevant authorities as per guidelines			2	2	0
	Report & Record	PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the change management activities and sign-off is obtained from relevant personnel		12	2	2	0
		PC2. ensure that documents that are required to be updated are identified			4	0	4
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines			4	2	2
		PC4. ensure that documents are available to all appropriate authorities to inspect			2	2	0
					100	25	75
4. TEL/N6203 (Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades)	Analyze BSS performance reports, BSS alarm details	PC1. obtain network reports from OSS and review network performance on defined parameters	100	59	5	5	0
		PC2. analyze reports for software error bugs, high temperature sites, SD block, TCH block and adherence to other performance KPIs			10	5	5
		PC3. collect and analyze various logs like computer logs, black box logs from BSC			5	5	0
		PC4. ensure root cause analysis is undertaken for all faults related to BSS			10	5	5
		PC5. ensure tracking of false alarms records and co-ordinate for rectification of the same			10	5	5

TEL/Q6200

Qualification Pack for BSS Engineer

		PC6. perform real time analysis of alarms to support field team in troubleshooting			10	0	10
		PC7. analyze alarm communication records to ensure that all the alarms are informed to field team with minimum delay			9	4	5
	Analyze customer complaints	PC1. ensure customer complaints pertaining to BSS are resolved within defined timelines		10	5	5	0
		PC2. escalate unresolved complaints/ instances of delay in resolution as per Company's policy			5	5	0
	Suggest actions to BSS field teams and assist in service delivery	PC1. suggest specific maintenance activities to field team to ensure the identified network or customer related issues are addressed		31	5	5	0
		PC2. ensure timely completion of activities by monitoring performance of the field teams			5	5	0
		PC3. assist field team in troubleshooting during maintenance and fault correction activities			8	2	6
		PC4. ensure coordination with Infra engineers in case of infra related alarms/ faults			9	5	4
		PC5. ensure periodic communication between zonal teams to facilitate sharing of good practices, typical alarm details of each zone			4		
						0	4
					100	56	44