

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 – Cluster In-Charge

SECTOR: TELECOM

SUB-SECTOR: Passive Infrastructure

OCCUPATION: Operation and Maintenance

REFERENCE ID: TEL/Q4101

ALIGNED TO: NCO-2015/3113.0901

Brief Job Description: Individual at this job needs to ensure increase in site up-time and reduce energy cost; monitor preventive maintenance, corrective maintenance and on-site repair, through regular site visits and audits; maintain hygiene of the tower site; train site technicians; develop healthy relationship with landlords & vendors; handle all types of issues/fault on site and control other operational expenses.

Personal Attributes: This job requires the individual to be technically qualified; self-disciplined; action-orientated; people management skills; possess analytical skills; problem solving ability; effective communication skills and ability to work under pressure.

Job Details	Qualifications Pack Code	TEL/Q4101		
	Job Role	Cluster In-Charge		
	Credits NSQF	TBD	Version number	1.0
	Sector	Telecom	Drafted on	16/04/2013
	Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
	Occupation	Operation and Maintenance	Next Review Date	31/03/2019
	NSQC Clearance On	18 / 06 / 2015		

Job Role	Cluster In-Charge
Role Description	Increase up-time of tower site and reduce energy cost
NSQF level	5
Minimum Educational Qualifications*	ITI/ Diploma in Electricals/Mechanical
Maximum Educational Qualifications*	B Tech. or B.Sc in Electricals/Mechanical
Training (Suggested but not mandatory)	NA
Minimum Job Entry Age	22
Experience	3-5 years for B Tech / B.E.
Applicable National Occupational Standards (NOS)	Compulsory: 1. TEL/N4105 (Maintain site hygiene) 2. TEL/N4106 (Maintain site up-time) 3. TEL/N4107 (OPEX management) 4. TEL/N4108 (Identify and resolve issues) 5. TEL/N4104 (Corrective Maintenance)
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
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
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
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge
NOS (National Occupational Standards)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles under which role-holders perform similar/related set of functions in an industry
Occupational Standards	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
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.
Performance Criteria	Performance criteria are statements that together specify the standards of performance required when carrying out a task.
QP (Qualification 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
Qualification Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with, in carrying out the function which has a critical impact on the quality of performance required
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
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities
Unit Code	Unit Code is a unique identifier for an OS unit, which can be denoted with either an 'O' or an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do
Vertical	Vertical may exist within a sub-sector representing different domain

	areas or the client industries served by the industry
TAT (Turn around time)	The time taken to resolve a request or a complaint of the customer
Telecom	Is a communication sector consisting of companies who provide telephonic communication facilities to the public
Escalation matrix	The channel for escalating the issue/problem of the customer to a supervisor or senior who possesses more expertise in handling and resolving customer's concern
OPCO (Operating Company)	The company that is the actual manufacturer of a product or service. In this case service providers are the operating companies
Site optimization	Upgrading the passive infrastructure
Mobile towers – Tower on wheels	A station in a land mobile system which remains in a fixed location and communicates with the mobile stations
AC (Air conditioners)	An air conditioner (often referred to as air con , AC or A/C) is a major or home appliance, system, or mechanism designed to change the air temperature and humidity within an area (used for cooling and sometimes heating depending on the air properties at a given time)
Warranty	A warranty describes the conditions under, and period during, which the producer or vendor will repair, replace, or compensate for the defective item without cost to the buyer or user. Often it also delineates the rights and obligations of both parties in case of a claim or dispute
Cluster	Group of 50-120 tower sites
OPEX (Operating Expenditure)	Is an ongoing cost for running a product, business or system. In business, an operating expense is a day-to-day expense such as sales and administration, or research and development, as opposed to production, costs and pricing

The following acronyms/codes have been used in the nomenclature above:

Acronyms

Keywords /Terms	Description
ZOM	Zonal Operation Manager
O&M	Operations & Maintenance
PIU	Power Interface Unit
SMPS	Switch-Mode Power Supply
BTS	Base Transceiver Station
BSC	Base Station Controller
MSC	Mobile Switching Center
DG	Diesel Generator
EB	Electricity Board
NOC	Network operating centre
GBT	Ground based tower
RTP	Roof Top Tower

National Occupational Standard



Overview

This unit is about maintaining site hygiene, regular site and technician's audit and taking corrective actions against identified deficiencies.

TEL/N4105

Maintain site hygiene

National Occupational Standard	Unit Code	TEL/N4105
	Unit Title (Task)	Maintain site hygiene
	Description	This OS unit is about maintaining the functionality of tower site.
	Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor • vendor • landlord Compliance audit for: • technicians • sites Maintain site hygiene
	Performance Criteria(PC) w.r.t. the Scope:	
	Element	Performance Criteria
		To be competent, the user/individual on the job must be able to: PC1. maintain excellent level of site quality like proper cable laying, correct temperature, correct settings, site in auto mode etc. PC2. provide for safety of assets and the team PC3. periodic audit by visiting sites to assure that civil, tower, electrical and other infrastructure are in the best state PC4. conduct periodic compliance audit of technicians, vendors, spares including any ethical issues incorrect billing calculations, diesel or energy cost etc. PC5. check for maintenance of site cleanliness and hygiene of AC, DG, PIU, SMPS, battery bank and shelter, as per organization's norms PC6. maintain work standards despite movement of manpower PC7. check and resolve site lock issues with landlord, legal etc.
Knowledge and Understanding		
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of)	The user/individual on the job needs to know and understand: KA1. OPCO's policies and standards followed by the company, to maintain sites KA2. repair and maintenance guidelines of the company to verify standards of repair / maintenance done on site KA3. asset layout as per company standards KA4. understanding of usage & wastage of energy at sites	

TEL/N4105

Maintain site hygiene

responsibilities)	
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. preparation and execution process of assigned site visit plan KB2. technical structuring of equipments installed on site to check preventive maintenance and repair done on site KB3. formats and checklists to verify preventive maintenance / repair of installed equipments KB4. importance of safety training for the individual KB5. basics of computers and MS excel KB6. use of mechanical equipments
Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend company policies and guidelines to maintain site standards SA2. read and comprehend formats and checklists for PM (preventive maintenance) by vendors/ technicians
	Writing Skills
	The user/individual on the job needs to know and understand how to: SA3. publish complete and correct fault analysis report
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to: SB1. diagnose reasons of down-time by analyzing site-down incidences SB2. perform fault analysis to find recurring faults on site SB3. analyze energy w.r.t power & fuel consumption patterns
	Quality Tools
	The user/individual on the job needs to know and understand how to: SB4. implement various quality tools to reduce technical problems, minimize down-time and recurring faults
	Relationship Building
	The user/individual on the job needs to know and understand how to: SB5. maintain healthy relationship with the landlord



TEL/N4105

Maintain site hygiene

NOS Version Control:

NOS Code	TEL/N4105		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	24/04/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
Occupation	Operation and Maintenance	Next review date	31/03/2019



National Occupational Standard



Overview

This unit is about maintaining site up-time to ensure high operational availability in line with SLAs.

TEL/N4106

Maintain site up-time

Unit Code	TEL/N4106
Unit Title (Task)	Maintain site up-time
Description	This OS unit is about maintaining site up-time.
Scope	This unit/task covers the following: Key stakeholders: • cluster in-charge/supervisor • tower technician • OPCOs Monitor tower up-time and operate with less/ zero faults Maintain existing sites for OPCOs (Operating companies) Supervise technicians to ensure tower maintenance at regular intervals
Performance Criteria(PC) w.r.t. the Scope:	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. create a PM (preventive maintenance) plan for self and the technicians PC2. create and monitor Beat plan execution, for self and technicians PC3. monitor site PM (preventive maintenance) PC4. perform health check on site like checking engine oil, voltage etc. PC5. validate periodic maintenance check conducted by the vendor technicians PC6. monitor site faults, ensure timely rectification and devise solution of the recurring faults PC7. create fault analysis and up-time report for all sites of the cluster PC8. maintain zero breakdown delivery for cluster, to optimize Operating Expenditure (OPEX) PC9. share best practices of technicians to maintain site up-time, through e-mails/meetings
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of	The user/individual on the job needs to know and understand: KA1. OPCOs policies and standards followed by the company to maintain sites KA2. site up-time targets of the company, to avoid penalties KA3. repair and maintenance guidelines of the company to verify standards of repair / maintenance done on site KA4. impact of OPEX (operating expenditure) on the company

TEL/N4106

Maintain site up-time

responsibilities)	
B. Technical Knowledge	The user/individual on the job needs to know and understand: - KB1. preparation and execution process of assigned site visit plan for self and technicians - KB2. technical structuring of equipments installed on site to check preventive maintenance and repair done on site - KB3. formats and checklists to verify preventive maintenance / repair of installed equipments - KB4. basics of computers and MS excel - KB5. importance of safety training for the individual
Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills
	The user/ individual on the job needs to know and understand how to: - SA1. read and comprehend company policies and guidelines to maintain site standards - SA2. read and comprehend formats and checklists to verify PM (preventive maintenance) / repair done by vendors/ technicians
	Writing Skills
	The user/individual on the job needs to know and understand how to: - SA3. publish complete and correct fault analysis report - SA4. write an email to share best practices performed by technicians, to increase of site up-time
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to: - SB1. diagnose reasons of down-time through up-time analysis - SB2. perform fault analysis to find recurring faults on site
	Quality Maximization Skills
	The user/individual on the job needs to know and understand how to: SB3. implement various quality tools to reduce technical problems, minimize down-time and recurring faults
	Team Management Skills
	The user/individual on the job needs to know and understand how to: SB4. engage and enthuse technicians, to maintain site up-time

TEL/N4106

Maintain site up-time

NOS Version Control:

NOS Code	TEL/N4106		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	24/04/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
Occupation	Operation and Maintenance	Next review date	31/03/2019



National Occupational Standard



Overview

This unit is about OPEX (operational expenditure) management and regulating impact of increase in expenditure.

TEL/N4107

OPEX management

National Occupational Standard

Unit Code	TEL/N4107
Unit Title (Task)	OPEX management
Description	This OS unit is about OPEX (operational expenditure) management and regulating impact of increase in expenditure.
Scope	This unit/task covers the following: Key stakeholders: - cluster in-charge/supervisor - zonal manager/cluster manager - OPCOs Manage OPEX (operating expenditure) to avoid impact on OPCOs
Performance Criteria(PC) w.r.t. the Scope:	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. maintain energy cost through site automation, diesel cost per tenant etc. PC2. troubleshoot DG/Battery bank PC3. identify scope for security head count reduction and inform Zonal Manager PC4. check proper locking of main gate / DG / Shelter etc. PC5. govern vendors effectively to ensure that PM & repair costs are within control
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. OPCOs policies and standards followed by the company to maintain sites KA2. repair and maintenance guidelines of the company to save energy cost KA3. impact of OPEX (operating expenditure) on the company
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basics of computers and MS excel KB2. importance of safety training for the individual

TEL/N4107

OPEX management

Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend company policies and guidelines to maintain site standards SA2. read and comprehend repair and maintenance formats and checklists to save energy costs of the organization
	Writing Skills
	The user/individual on the job needs to know and understand how to: SA3. publish complete and correct fault analysis report SA4. write an e-mail to share best practices performed by technicians, to increase of site up-time
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to: SB1. analyse recurring faults and quantum of spare components used SB2. analyse use of high value spares SB3. analyse day-to-day logs of fuel and energy consumption
	Quality Maximization Skills
	The user/individual on the job needs to know and understand how to: SB4. implement various quality tools to reduce technical problems, minimize down-time and recurring faults
	Financial Management Skills
	The user/individual on the job needs to know and understand how to: SB5. budget operating expenditure at the site
	Team Management Skills
	The user/individual on the job needs to know and understand how to: SB6. engage and enthuse technicians, to maintain site up-time

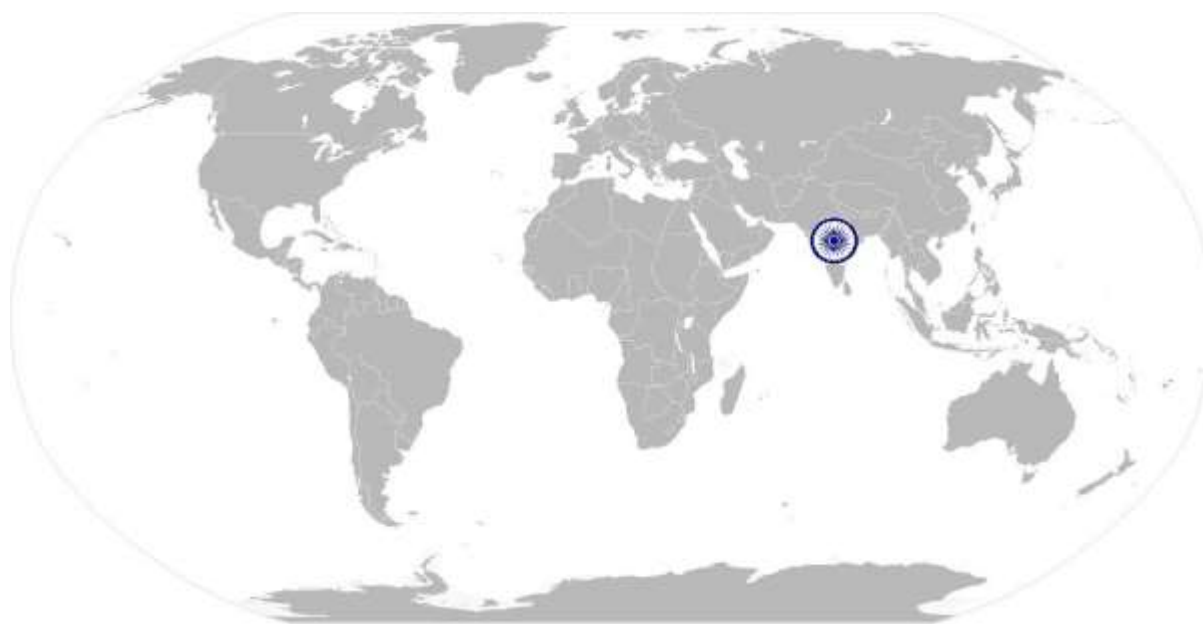


TEL/N4107

OPEX management

NOS Version Control:

NOS Code	TEL/N4107		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
Occupation	Operation and Maintenance	Next review date	31/03/2019



National Occupational Standard



Overview

This unit is about identifying and resolving site, landlord and infrastructure related issues.



TEL/N4108

Identify and resolve issues

National Occupational Standard

Unit Code	TEL/N4108
Unit Title (Task)	Identify and resolve issues
Description	This OS unit is about identifying and resolving site, landlord and infrastructure related issues.
Scope	This unit/task covers the following: Key stakeholders: • site technicians • landlords • customers Identify and resolve issues
Performance Criteria(PC) w.r.t. the Scope:	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. understand issues escalated by tower technicians and provide relevant solution PC2. identify and track the number of sites being locked PC3. interact with landlords to understand their issues and offer best solution
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. OPCOs policies and standards followed by the company to maintain sites KA2. significance of maintaining good relations with technician and landlord

TEL/N4108

Identify and resolve issues

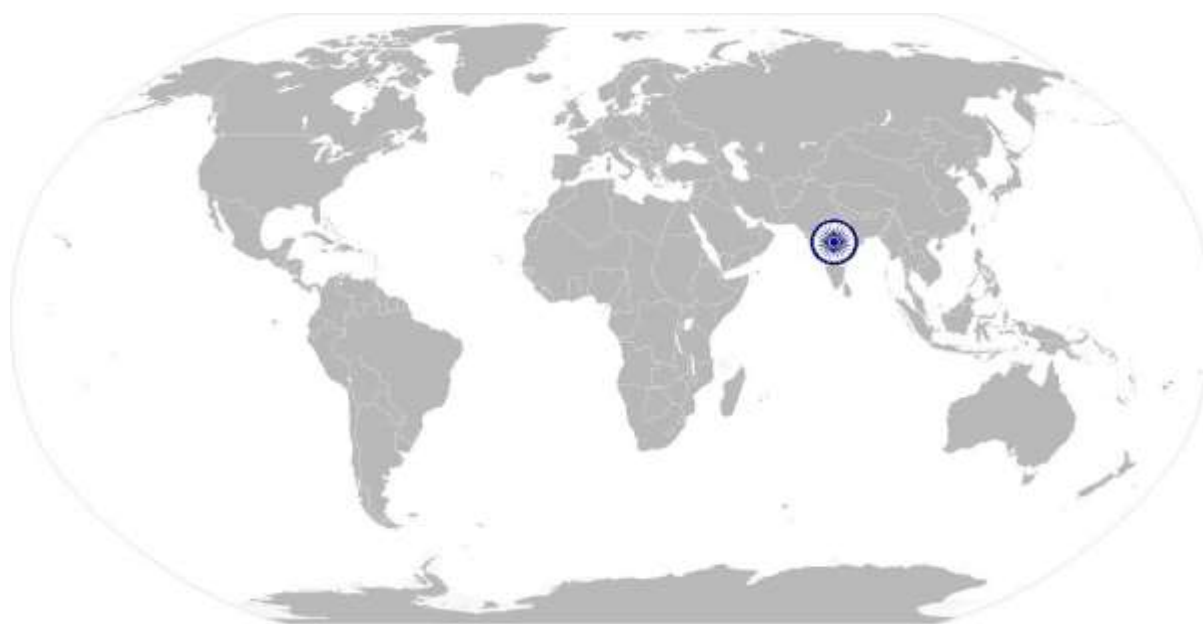
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. lock site management process KB2. escalation matrix
Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills The user/ individual on the job needs to know and understand how to: SA1. read and comprehend company policies and guidelines to maintain site standards
B. Professional Skills	Analytical Skills The user/individual on the job needs to know and understand how to: SB1. analyze issues of technicians, landlords and vendors Problem Resolving Skills The user/individual on the job needs to know and understand how to: SB2. resolve landlord, vendor and technician issues

TEL/N4108

Identify and resolve issues

NOS Version Control:

NOS Code	TEL/N4108		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	26/04/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
Occupation	Operation and Maintenance	Next review date	31/03/2019



National Occupational Standard



Overview

This unit is about corrective maintenance of DG, AC, PIU, SMPS, Battery Bank and Shelter, within defined SLA.



TEL/N4104

Corrective Maintenance

Unit Code	TEL/N4104
Unit Title (Task)	Corrective Maintenance
Description	This OS unit is about performing corrective maintenance activities.
Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor Fill respective reports/check lists Follow the escalation matrix
Performance Criteria(PC) w.r.t. the Scope:	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. timely identification of the need for corrective maintenance PC2. adhere to maintenance plan PC3. effective corrective maintenance on all equipment PC4. escalate faults/issues at site to supervisor PC5. fill the corrective maintenance checklists/reports PC6. close maximum number of faults reported
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. PM (preventive maintenance) norms as per the company KA2. corrective maintenance norms as per the company KA3. site up-time targets of the company, to avoid penalties KA4. repair and maintenance guidelines of the company
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. functional knowledge of all equipment KB2. knowledge of all system components KB3. knowledge of special tools and equipment used for system repairs

TEL/N4104

Corrective Maintenance

Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend technical drawings and technical content
	Oral communication Skills
	The user/ individual on the job needs to know and understand how to: SA2. communicate the issue/fault with complete details to the supervisor
B. Professional Skills	Analytical Skills
	The user/individual on the job needs to know and understand how to: SB1. diagnose need for corrective maintenance based on system parameters and performance SB2. perform fault analysis to identify and repair/replace components which may lead to a fault
	Planning and Execution
	The user/individual on the job needs to know and understand how to: SB1. prioritize to conduct corrective maintenance activities effectively



TEL/N4104

Corrective Maintenance

NOS Version Control:

NOS Code	TEL/N4104		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	21/06/2018
Occupation	Operation and Maintenance	Next review date	31/03/2019



Job Role

CLUSTER IN-CHARGE

Qualification Pack

TEL/Q4101

Sector Skill Council

Telecom

Guidelines for assessment

- 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.
- The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
- Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
- To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
- In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessment Outcome	Assessment Criteria	Total Mark (400)	Out Of	Theory	Skills Practical
1. TEL/N4105 (Maintain site hygiene)	PC1. maintain excellent level of site quality like proper cable laying, correct temperature, correct settings, site in auto mode etc.	100	20	10	10
	PC2. provide for safety of assets and the team		15	10	5
	PC3. periodic audit by visiting sites to assure that civil, tower, electrical and other infrastructure are in the best		20	10	10
	PC4. conduct periodic compliance audit of technicians, vendors, spares including any ethical issues incorrect billing calculations, diesel or energy cost etc.		10	5	5
	PC5. check for maintenance of site cleanliness and hygiene of AC, DG, PIU, SMPS, battery bank and shelter, as per organization's norms		20	5	15
	PC6. maintain work standards despite movement of manpower		10	10	0
	PC7. check and resolve site lock issues with landlord, legal etc.		5	0	5
Total		100	50	50	
2. TEL/N4106 (Maintain site up-time)	PC1. create a PM (preventive maintenance) plan for self and the technicians	100	20	10	10
	PC2. create and monitor Beat plan execution, for self and technicians		10	10	0
	PC3. monitor site PM (preventive maintenance)		10	5	5
	PC4. perform health check on site like checking engine oil, voltage etc.		10	0	10
	PC5. validate periodic maintenance check conducted by the vendor technicians		10	5	5
	PC6. monitor site faults, ensure timely rectification and devise solution of the recurring faults		15	5	10
	PC7. create fault analysis and up-time report for all sites of the cluster		5	5	0
	PC8. maintain zero breakdown delivery for cluster, to optimize Operating Expenditure (OPEX)		10	10	0
	PC9. share best practices of technicians to maintain site up-time, through e-mails/meetings		10	10	0
Total		100	60	40	
3. TEL/N4107 (OPEX management)	PC1. maintain energy cost through site automation, diesel cost per tenant etc.	100	25	15	10
	PC2. troubleshoot DG/Battery bank		25	0	25
	PC3. identify scope for security head count reduction and inform Zonal Manager		15	15	0
	PC4. check proper locking of main gate / DG / Shelter etc.		15	5	10
	PC5. govern vendors effectively to ensure that PM & repair costs are within control		20	10	10
Total		100	45	55	
4. TEL/N4108 (Identify and resolve issues)	PC1. understand issues escalated by tower technicians and provide relevant solution	100	50	20	30
	PC2. identify and track the number of sites being locked		30	20	10
	PC3. interact with landlords to understand their issues and offer best solution		20	10	10
Total		100	50	50	
5. TEL/N4104 (Corrective Maintenance)	PC1. timely identification of the need for corrective maintenance	100	20	20	0
	PC2. adhere to maintenance plan		20	10	10
	PC3. effective corrective maintenance on all equipment		15	5	10
	PC4. escalate faults/issues at site to supervisor		15	10	5
	PC5. fill the corrective maintenance checklists/reports		15	15	0
	PC6. close maximum number of faults reported		15	5	10
Total		100	65	35	