Active Network Management Associate

QP Code: TEL/Q6302

Version: 2.0

NSQF Level: 5

Telecom Sector Skill Council || Telecom Sector Skill Council, 3rd Floor, Plot No. 126, Sector - 44 Gurgaon - 122003

Contents

TEL/Q6302: Active Network Management Associate

Brief Job Description

The individual in this job is responsible for provisioning of end-to-end circuits and managing network elements from a centralized server for a Network Management System.

Personal Attributes

The individual needs to have the ability to upgrade skills with changing technologies, work in a team, multitask and track multiple projects simultaneously with full dedication and willingness. The individual should have generic communication and leadership skills, attention to details, excellent problem-solving capabilities, strong quantitative abilities and good interpersonal skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N6307: Provisioning of Active Network Equipment

2. TEL/N6309: Monitoring and Reporting the Status of SDH, DWDM and L2 Equipment

3. TEL/N9103: Implement Effective Interaction at workplace

4. TEL/N9104: Manage Work, Resources and Safety at workplace

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Project Engineering
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3114.1301
Minimum Educational Qualification & Experience	Diploma (Computer Science/Electrical/Electronics/Telecommunication) with 1-2 Years of experience Switching and Routing

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Basic knowledge of OSI Layer, SDH, DWDM, active network and network routing
Minimum Job Entry Age	21 Years
Last Reviewed On	18/03/2021
Next Review Date	18/03/2026
Deactivation Date	18/03/2026
NSQC Approval Date	
Version	2.0

TEL/N6307: Provisioning of Active Network Equipment

Description

This OS unit provides standard guidelines for provisioning of SDH, DWDM equipment and ethernet services for Layer 2 devices using a Network Management System (NMS) installed in the Centralized Network Operation Centre (NOC).

Scope

The scope covers the following :

- Analyse the pre-requisites for provisioning
- Perform provisioning using the NMS
- Provision Dense Wavelength Division Multiplexing (DWDM), Amplifiers, Multi-Dwelling Unit (MDU) and Reconfigurable Optical Add/Drop Multiplexer (ROADM)
- Provision and activate end-to-end unprotected and protected circuits
- Provision ethernet services
- Deactivate and delete circuits
- Report and record provisioning

Elements and Performance Criteria

Analyse the pre-requisites for provisioning

To be competent, the user/individual on the job must be able to:

PC1.   identify networking and system requirements

PC2.   identify all equipment, services and other network elements that need to be provisioned and configured

Perform provisioning using NMS

To be competent, the user/individual on the job must be able to:

PC3.   identify the required hardware and software to launch NMS

PC4.   apply the credentials provided by supervisors for NMS Graphical User Interface (GUI)

PC5.   perform provisioning and system support using node view

PC6.   identify all network elements (nodes) in the Element Management System (EMS) depending on the equipment to provision - Software-Defined Networking (SDN) or DWDM

PC7.   design the network hierarchy mapping it to the network view of NMS and EMS

PC8.   perform installation, configuration and connectivity of NMS server and client software/switch

PC9.   configure NMS to reflect the nodes

Provision DWDM Amplifiers, MDU units and ROADM

To be competent, the user/individual on the job must be able to:

PC10.   provision the amplifier modules and Erbium-Doped Fiber Amplifier (EDFA)

PC11.   select the amplifier gain (based on flat gain or customer gain) and the amplifier type (pre-amplifier or post-amplifier) for the DWDM networks

PC12.   check for the gain using spectrometer as per requirements

PC13.   check optical supervisory channel for Dynamic Circuit Network (DCN) management amplification as per specifications

PC14. select transmission cards based on even or odd channel multiplexing and channel spacing

PC15. provision the correct DWDM SFPs in the MDU cards to ensure performance of multiplexing

PC16. provision the express channels in transmission cards to allow proper pass-through of other channels

PC17. ensure that client side SFPs are correctly provisioned as per requirements

PC18. provision ROADM based on the application

Provision and activate end-to-end unprotected and protected circuits

To be competent, the user/individual on the job must be able to:

PC19. ensure channels are configured (added and dropped) and provisioned correctly on the ROADM

PC20. configure NMS GUI to check its connectivity and layout using the topology view

PC21. configure circuits with correct parameters and label the nodes appropriately

PC22. verify creation of configured nodes and unprotected circuits in normal view of the GUI

PC23. analyse requirement of Plesiochronous Digital Hierarchy (PDH), Synchronous Digital Hierarchy (SDH), Virtual Concatenation Group (VCG) circuit types

PC24. analyse test results to localize faults and advise resolution of provisioning error(s)

PC25. identify the basic requirements for the protected circuit such as protected class of service menu, dual mode of protection in NMS, Wait-To-Restore (WTR) option, appropriate path, protection mechanism to be employed etc.

PC26. verify the protected circuit and filter the created circuit as specified in the guidelines

Provision ethernet services

To be competent, the user/individual on the job must be able to:

PC27. analyse the status of the circuit and activate the circuit, in case of pending status, as per instructions specified in the reference guide

PC28. ensure NMS is configured as per instructions specified in the reference guide

PC29. identify the connecting links between the ethernet devices and Layer 2 (L2) devices

PC30. interpret ethernet traffic flow between two device (one-to-one, one-to-many, or many-to-many) connections

PC31. analyse the different services such as point-to-point service (Tunnel and ELINE service), point-to-multipoint service (bridging and ELAN service)

PC32. provision point-to-point service in a point-to-multipoint environment and the capacity distribution profile

PC33. implement ethernet service from NMS GUI

PC34. measure Quality-of-Service (QoS) parameters for service and Operations, Administration and Maintenance (OAM) parameters

Deactivate and delete circuits

To be competent, the user/individual on the job must be able to:

PC35. configure per hop behaviour and traffic conditioning profiles

PC36. identify the circuit which requires deactivation or deletion

PC37. perform deactivation or deletion of the circuit from NMS

PC38. verify status of the deleted circuit from the circuit list

Report and record provisioning

To be competent, the user/individual on the job must be able to:

PC39. verify all nodes to check for circuit deletion and record information of deleted circuits

PC40. notify all relevant parties (O&M, NOC team and supervisors) about the circuit provisioning, activation, deactivation or any other task related to the circuits

PC41. record all newly created circuits with relevant parameters in the provisioning report format

PC42. update all relevant circuit and NMS records and ensure these are available to all appropriate authorities for inspection

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. risks and impact of not following defined procedures/work instructions

KU2. escalation matrix for reporting identified incidents, troubles and/or emergencies e.g. system failures, fire and power failures

KU3. working of DWDM technology, its applications, key components, network architecture and key considerations related to the deployment of DWDM

KU4. basic network management concepts and elements such as OSI architecture, LAN-MAN-WAN-VLAN concept and its architecture

KU5. application of NMS and configuration of server and client

KU6. PDH, SDH technology, mapping and multiplexing technology of SDH, ROADM and cross-connects

KU7. TCI/IP, IP addressing, subnetting, IP Routing protocols, i.e. RIP, OSPF, IGRP, VCG etc.

KU8. basic equipment design and application of network systems and optical fiber transmission

KU9. basics of LINUX, MySQL and simple Java commands

KU10. TMF814 Multi-Technology Network Management (MTNM) Solution Set standards

KU11. functions of attenuators, test equipment, line tester, Ethernet tester, VSWR meter, RF power meter, Optical meter etc.

KU12. mapping and multiplexing technology of DWDM

KU13. ethernet networking i.e. half duplex, full duplex, physical and data link layer ethernet

KU14. core, distribution and access layer architecture

KU15. ethernet media and connector requirement

KU16. basics of L2 switching technologies

KU17. different WAN protocols

KU18. Ethernet-over-SDH (EoS) technology and implementation

KU19. login cables (RJ45, RS232 and Hi Speed USB) for different site equipment

KU20. common security aspects such as access control, authentication, nonrepudiation, data confidentiality, etc

KU21. lowest security levels of the components of network

KU22. configuration of switches inside a network element

KU23. working of the different management frameworks in the NOC

KU24. provisioning reports to identify the preventive actions to eliminate error in provisioning

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read standards documents such as provisioning guides, reports, SOPs, user manuals

GS2. communicate with external stakeholders in their preferred language (English, Hindi or regional)

GS3. provide advice and guidance to peers and juniors

GS4. seek experts help timely, if needed at any stage

GS5. prioritise tasks in high-pressure environment

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Analyse the pre-requisites for provisioning	**1**	**4**	**-**	**1**
PC1. identify networking and system requirements	-	2	-	-
PC2. identify all equipment, services and other network elements that need to be provisioned and configured	1	2	-	1
Perform provisioning using NMS	**6**	**11**	**-**	**3**
PC3. identify the required hardware and software to launch NMS	1	1	-	-
PC4. apply the credentials provided by supervisors for NMS Graphical User Interface (GUI)	-	1	-	1
PC5. perform provisioning and system support using node view	1	1	-	-
PC6. identify all network elements (nodes) in the Element Management System (EMS) depending on the equipment to provision - Software-Defined Networking (SDN) or DWDM	1	3	-	1
PC7. design the network hierarchy mapping it to the network view of NMS and EMS	1	1	-	1
PC8. perform installation, configuration and connectivity of NMS server and client software/switch	1	1	-	-
PC9. configure NMS to reflect the nodes	1	3	-	-
Provision DWDM Amplifiers, MDU units and ROADM	**7**	**9**	**-**	**3**
PC10. provision the amplifier modules and Erbium-Doped Fiber Amplifier (EDFA)	1	1	-	1
PC11. select the amplifier gain (based on flat gain or customer gain) and the amplifier type (pre-amplifier or post-amplifier) for the DWDM networks	-	1	-	1
PC12. check for the gain using spectrometer as per requirements	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check optical supervisory channel for Dynamic Circuit Network (DCN) management amplification as per specifications	1	1	-	-
PC14. select transmission cards based on even or odd channel multiplexing and channel spacing	1	1	-	-
PC15. provision the correct DWDM SFPs in the MDU cards to ensure performance of multiplexing	1	1	-	1
PC16. provision the express channels in transmission cards to allow proper pass-through of other channels	-	1	-	-
PC17. ensure that client side SFPs are correctly provisioned as per requirements	1	1	-	-
PC18. provision ROADM based on the application	1	1	-	-
Provision and activate end-to-end unprotected and protected circuits	**9**	**8**	**-**	**3**
PC19. ensure channels are configured (added and dropped) and provisioned correctly on the ROADM	1	1	-	1
PC20. configure NMS GUI to check its connectivity and layout using the topology view	1	1	-	-
PC21. configure circuits with correct parameters and label the nodes appropriately	1	1	-	-
PC22. verify creation of configured nodes and unprotected circuits in normal view of the GUI	1	1	-	-
PC23. analyse requirement of Plesiochronous Digital Hierarchy (PDH), Synchronous Digital Hierarchy (SDH), Virtual Concatenation Group (VCG) circuit types	1	1	-	1
PC24. analyse test results to localize faults and advise resolution of provisioning error(s)	1	1	-	-
PC25. identify the basic requirements for the protected circuit such as protected class of service menu, dual mode of protection in NMS, Wait-To-Restore (WTR) option, appropriate path, protection mechanism to be employed etc.	2	1	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. verify the protected circuit and filter the created circuit as specified in the guidelines	1	1	-	-
Provision ethernet services	**7**	**10**	**-**	**3**
PC27. analyse the status of the circuit and activate the circuit, in case of pending status, as per instructions specified in the reference guide	1	1	-	-
PC28. ensure NMS is configured as per instructions specified in the reference guide	1	1	-	-
PC29. identify the connecting links between the ethernet devices and Layer 2 (L2) devices	1	1	-	-
PC30. interpret ethernet traffic flow between two device (one-to-one, one-to-many, or many-to-many) connections	-	1	-	-
PC31. analyse the different services such as point-to-point service (Tunnel and ELINE service), point-to-multipoint service (bridging and ELAN service)	1	1	-	1
PC32. provision point-to-point service in a point-to-multipoint environment and the capacity distribution profile	1	1	-	1
PC33. implement ethernet service from NMS GUI	1	1	-	-
PC34. measure Quality-of-Service (QoS) parameters for service and Operations, Administration and Maintenance (OAM) parameters	1	3	-	1
Deactivate and delete circuits	**2**	**4**	**-**	**1**
PC35. configure per hop behaviour and traffic conditioning profiles	-	1	-	-
PC36. identify the circuit which requires deactivation or deletion	1	1	-	-
PC37. perform deactivation or deletion of the circuit from NMS	-	1	-	1
PC38. verify status of the deleted circuit from the circuit list	1	1	-	-
Report and record provisioning	**3**	**4**	**-**	**1**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC39. verify all nodes to check for circuit deletion and record information of deleted circuits	1	1	-	-
PC40. notify all relevant parties (O&M, NOC team and supervisors) about the circuit provisioning, activation, deactivation or any other task related to the circuits	1	1	-	-
PC41. record all newly created circuits with relevant parameters in the provisioning report format	-	1	-	1
PC42. update all relevant circuit and NMS records and ensure these are available to all appropriate authorities for inspection	1	1	-	-
NOS Total	**35**	**50**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6307
NOS Name	Provisioning of Active Network Equipment
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Project Engineering
NSQF Level	5
Credits	TBD
Version	2.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TEL/N6309: Monitoring and Reporting the Status of SDH, DWDM and L2 Equipment

Description

This OS unit is about monitoring health of the network elements (SDH, DWDM or Layer 2 equipment) and reporting the status to appropriate authority.

Scope

The scope covers the following :

- Implement and support monitoring activities
- Resolve monitoring problems
- Generate, review and analyse reports

Elements and Performance Criteria

Implement and support monitoring activities

To be competent, the user/individual on the job must be able to:

PC1. identify the required hardware and software to launch Network Management System (NMS)

PC2. apply the login credentials of NMS provided by supervisors for monitoring the network alarms

PC3. analyse the relevant links in NMS window for monitoring and reporting activities as indicated in reference guide

PC4. monitor the status of Synchronization Clock source in Network Elements

PC5. record the performance management parameters in network element

PC6. verify the network topology for connectivity of all network elements

PC7. identify and monitor the critical parameters for network health

PC8. identify any deviations in the NMS for monitoring

PC9. record the network deviations appropriately in specified format

Resolve monitoring problems

To be competent, the user/individual on the job must be able to:

PC10. locate the root cause, and solution, to the problem by referring to the guidelines

PC11. resolve all issues within scope and escalate the issues beyond the scope of work for monitoring

PC12. analyse the queries from the network team

PC13. record monitoring activities in a specified format to the concerned authorities

Generate, review and analyse reports

To be competent, the user/individual on the job must be able to:

PC14. identify the typical reports in the NMS such as circuit provisioning report, Dynamic Circuit Network (DCN) report and other customised reports that needs to be generated

PC15. generate individual as well as bulk reports as per requirements based on time frames and order

Review and analyse reports

To be competent, the user/individual on the job must be able to:

PC16. review the generated reports to verify correct network parameters recording

PC17. identify the limitations of generated report to reveal relevant information and take corrective action

PC18. identify the causes of potential bottlenecks after analysis of report as per the guidelines

PC19. notify all relevant parties (O&M, NOC team, supervisor) for report generation and submission

PC20. send reports to the authorised personnel in the required format

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. types of documentation in organization and its importance

KU2. records to be maintained and implication of non-maintenance

KU3. application scenario of NMS, architecture and configuration of server and client

KU4. alarm severity

KU5. managing and filtering of alarms

KU6. cross-connects and fiber transmission

KU7. various formats (PDF/XML/HTML/DOC) in which the report needs to be generated

KU8. Operating System (OS) such as Windows and Linux/Unix, network management system server and client

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. interpret notifications, alert and messages

GS2. read and comprehend generated report

GS3. analyse problems and their suitable solutions

GS4. implement ways to timely take actions on issues

GS5. multitask activities in daily life at work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Implement and support monitoring activities	**17**	**26**	**-**	**6**
PC1. identify the required hardware and software to launch Network Management System (NMS)	2	3	-	1
PC2. apply the login credentials of NMS provided by supervisors for monitoring the network alarms	2	3	-	1
PC3. analyse the relevant links in NMS window for monitoring and reporting activities as indicated in reference guide	1	3	-	1
PC4. monitor the status of Synchronization Clock source in Network Elements	1	3	-	-
PC5. record the performance management parameters in network element	2	3	-	1
PC6. verify the network topology for connectivity of all network elements	2	3	-	-
PC7. identify and monitor the critical parameters for network health	2	3	-	1
PC8. identify any deviations in the NMS for monitoring	3	3	-	1
PC9. record the network deviations appropriately in specified format	2	2	-	-
Resolve monitoring problems	**5**	**11**	**-**	**4**
PC10. locate the root cause, and solution, to the problem by referring to the guidelines	1	3	-	1
PC11. resolve all issues within scope and escalate the issues beyond the scope of work for monitoring	2	3	-	1
PC12. analyse the queries from the network team	1	3	-	1
PC13. record monitoring activities in a specified format to the concerned authorities	1	2	-	1
Generate, review and analyse reports	**3**	**5**	**-**	**2**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. identify the typical reports in the NMS such as circuit provisioning report, Dynamic Circuit Network (DCN) report and other customised reports that needs to be generated	2	3	-	1
PC15. generate individual as well as bulk reports as per requirements based on time frames and order	1	2	-	1
Review and analyse reports	**5**	**13**	**-**	**3**
PC16. review the generated reports to verify correct network parameters recording	1	3	-	-
PC17. identify the limitations of generated report to reveal relevant information and take corrective action	1	2	-	1
PC18. identify the causes of potential bottlenecks after analysis of report as per the guidelines	1	3	-	1
PC19. notify all relevant parties (O&M, NOC team, supervisor) for report generation and submission	1	2	-	1
PC20. send reports to the authorised personnel in the required format	1	3	-	-
NOS Total	**30**	**55**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6309
NOS Name	Monitoring and Reporting the Status of SDH, DWDM and L2 Equipment
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Project Engineering
NSQF Level	5
Credits	TBD
Version	2.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TEL/N9103: Implement Effective Interaction at workplace

Description

This OS unit is about communicating with superiors and colleagues as well as customers and other stakeholders in own or other work groups within as well as outside the organisation

Scope

The scope covers the following :

- Interact effectively with superiors
- Interact effectively with colleagues and customers
- Respect differences of gender and ability

Elements and Performance Criteria

Interact effectively with superiors

To be competent, the user/individual on the job must be able to:

PC1.   interpret work requirements from the superior and customers

PC2.   report any unforeseen disruptions or delays to superiors and/or concerned person

PC3.   achieve productivity and quality of work as per the company procedure

Interact effectively with colleagues and customers

To be competent, the user/individual on the job must be able to:

PC4.   explain the work requirements and the scope of work to the team

PC5.   communicate information using different techniques such as face-to-face, telephonic and written means

PC6.   co-ordinate with team to integrate work as per requirements

PC7.   respect colleagues and customers and communicate taking care of their personal spaces

PC8.   find solutions to work related difficulties with mutual agreement with colleagues and customers

PC9.   resolve conflicts within the team at work to achieve smooth workflow

PC10. motivate team members to put organizational goals over individual goals

PC11. encourage the team to provide feedback on any issues facing them

Respect differences of gender and ability

To be competent, the user/individual on the job must be able to:

PC12. ensure personal behaviour of self and team is conducted taking gender and disability of the person into consideration

PC13. demonstrate sensitivity towards gender and person with disability while communicating

PC14. list the different types of disabilities with their respective issues

PC15. provide help to PwD team members in overcoming any challenges faced in work

PC16. use inclusive language irrespective of the disability and the gender of the person

PC17. treat all colleagues and co-workers equally

PC18. respect personal space of colleagues and co-workers

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. importance of effective and different means of communication and establishing good working relationships with colleagues and superiors

KU2. importance of helping colleagues with problems, in order to meet quality and time standards as a team

KU3. different methods of communication

KU4. different types of information that colleagues might need and the importance of providing this information in an appropriate manner

KU5. helping colleagues with problems, in order to meet quality and time standards as a team

KU6. organisation's policies and procedures for working with colleagues and superior

KU7. implications of own work on the work and schedule of others

KU8. importance of understanding consequences of gender based behaviour

KU9. gender based concepts, issues and legislation

KU10. organisation standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the statutory bodies and the right way to use them including various medical conditions associated with PwD

KU11. health and safety requirements at workplace for PwD

KU12. rights and duties at workplace with respect to PwD

KU13. process of recruiting people for a particular job profile w.r.t PwD and gender

KU14. various government / private schemes and benefits available for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. complete written work with attention to detail and read instructions/guidelines/procedures

GS2. listen effectively and orally communicate information

GS3. ask for clarification and advice from the concerned person

GS4. deliver consistent and reliable service to customers

GS5. check that the work meets customer requirements

GS6. practice and acceptance of gender and its concepts

GS7. develop empathy across genders and towards PwD

GS8. reflect on own gender identity, gender roles and PwD issues

GS9. engage and participate in discussions to end gender and disability discrimination

GS10. improve and modify work practices

GS11. maintain positive and effective relationships with colleagues and customers

GS12. evaluate the possible solution(s) to the problem

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interact effectively with superiors	**2**	**9**	**-**	**1**
PC1. interpret work requirements from the superior and customers	1	2	-	-
PC2. report any unforeseen disruptions or delays to superiors and/or concerned person	1	2	-	1
PC3. achieve productivity and quality of work as per the company procedure	-	5	-	-
Interact effectively with colleagues and customers	**13**	**27**	**-**	**5**
PC4. explain the work requirements and the scope of work to the team	2	3	-	-
PC5. communicate information using different techniques such as face-to-face, telephonic and written means	2	4	-	1
PC6. co-ordinate with team to integrate work as per requirements	-	4	-	1
PC7. respect colleagues and customers and communicate taking care of their personal spaces	-	3	-	-
PC8. find solutions to work related difficulties with mutual agreement with colleagues and customers	3	3	-	-
PC9. resolve conflicts within the team at work to achieve smooth workflow	-	4	-	1
PC10. motivate team members to put organizational goals over individual goals	3	4	-	1
PC11. encourage the team to provide feedback on any issues facing them	3	2	-	1
Respect differences of gender and ability	**15**	**24**	**-**	**4**
PC12. ensure personal behaviour of self and team is conducted taking gender and disability of the person into consideration	2	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. demonstrate sensitivity towards gender and person with disability while communicating	2	3	-	1
PC14. list the different types of disabilities with their respective issues	2	3	-	1
PC15. provide help to PwD team members in overcoming any challenges faced in work	2	3	-	-
PC16. use inclusive language irrespective of the disability and the gender of the person	2	3	-	1
PC17. treat all colleagues and co-workers equally	2	3	-	-
PC18. respect personal space of colleagues and co-workers	3	5	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9103
NOS Name	Implement Effective Interaction at workplace
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TEL/N9104: Manage Work, Resources and Safety at workplace

Description

This OS unit is about planning work and implementing sustainable as well as healthy practices for safety and optimal use of resources

Scope

The scope covers the following :

- Manage learning and self-direction
- Develop critical thinking and problem solving
- Perform work as per quality standards
- Maintain safe and secure working environment
- Comply with material / energy / electricity conservation practices

Elements and Performance Criteria

Manage learning and self-direction

To be competent, the user/individual on the job must be able to:

PC1. develop technical and personal skills to be updated with new technologies prevalent in the industry

PC2. train the team such that they are able to adapt latest products/services in their working environment

PC3. identify opportunities for team building workshops and motivational trainings

Develop critical thinking and problem solving

To be competent, the user/individual on the job must be able to:

PC4. guide the team to be accountable for timely completion of tasks

PC5. analyse problems accurately to be able to correctly suggest suitable solutions to the concerned persons

PC6. train the team to estimate the cause of the problem and validate

Perform work as per quality standards

To be competent, the user/individual on the job must be able to:

PC7. implement ways to keep immediate as well as team's work area clean and tidy

PC8. maintain efficiency and productivity while performing role/responsibility

PC9. supervise the team to ensure that the work is done as per the assigned and agreed requirements

PC10. create schedules and rosters for the team to ensure they understand individual work requirements

Maintain safe and secure working environment

To be competent, the user/individual on the job must be able to:

PC11. identify organisation's health, safety, security policies and procedures

PC12. instruct team to report any identified breaches in health, safety, and security policies and procedures to the designated person

PC13. manage hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority

PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected

Material / energy / electricity conservation practices

To be competent, the user/individual on the job must be able to:

PC15. implement ways to optimize usage of material including water in various tasks/activities/processes

PC16. supervise the team to ensure responsible use of resources

PC17. motivate the team to carry out routine cleaning of tools, machine and equipment

PC18. guide the team to optimize use of electricity/energy in various tasks/activities/processes

PC19. implement periodic checks of the functioning of the equipment/machine and rectify wherever required

PC20. guide the team to report malfunctioning and lapses in maintenance of equipment

PC21. implement ways to use electrical equipment and appliances properly

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. strategies pertinent to the field that can be used to pursue an advancement of skills

KU2. key performance indicators for the new tasks

KU3. feedback processes and formats

KU4. timelines and goals as well as their relevance to work allocated

KU5. importance of quality and timely delivery of the product/service

KU6. layout of the workstation and equipment used

KU7. escalation matrix and its importance, especially in case of emergencies

KU8. ways of time and cost management

KU9. rules/regulation for maintaining health and safety at workplace

KU10. meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work

KU11. procedures to report breaches in health, safety and security

KU12. ways of managing resources and material efficiently

KU13. ways to recognize common electrical problems and common practices of conserving electricity

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. explore various pathways to expand one's own learning skills and abilities

GS2. analyse feedback for improving one's way of working

GS3. interpret feedback from superiors in a constructive way

GS4. identify the root cause of problems

GS5. understand the problem by asking significant questions to clarify the various points of view on the problem

GS6. seek clarifications from superior about the job requirement

GS7. work in a team with full coordination of team members

GS8. read instructions/guidelines and Standard Operating Practices (SOP) documents

GS9. complete tasks efficiently and accurately within stipulated time

GS10. record data in statutory documents relevant to safety and hygiene

GS11. escalate/refer all anomalies to the concerned persons

GS12. identify the most suitable course of action for completing the task using provided resources

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Manage learning and self-direction	**4**	**5**	**-**	**-**
PC1. develop technical and personal skills to be updated with new technologies prevalent in the industry	2	1	-	-
PC2. train the team such that they are able to adapt latest products/services in their working environment	1	2	-	-
PC3. identify opportunities for team building workshops and motivational trainings	1	2	-	-
Develop critical thinking and problem solving	**4**	**7**	**-**	**-**
PC4. guide the team to be accountable for timely completion of tasks	2	3	-	-
PC5. analyse problems accurately to be able to correctly suggest suitable solutions to the concerned persons	1	2	-	-
PC6. train the team to estimate the cause of the problem and validate	1	2	-	-
Perform work as per quality standards	**5**	**9**	**-**	**4**
PC7. implement ways to keep immediate as well as team's work area clean and tidy	1	2	-	-
PC8. maintain efficiency and productivity while performing role/responsibility	1	2	-	2
PC9. supervise the team to ensure that the work is done as per the assigned and agreed requirements	1	2	-	1
PC10. create schedules and rosters for the team to ensure they understand individual work requirements	2	3	-	1
Maintain safe and secure working environment	**12**	**13**	**-**	**2**
PC11. identify organisation's health, safety, security policies and procedures	3	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. instruct team to report any identified breaches in health, safety, and security policies and procedures to the designated person	3	3	-	-
PC13. manage hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	3	4	-	1
PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	3	3	-	1
Material / energy / electricity conservation practices	**15**	**16**	**-**	**4**
PC15. implement ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	1
PC16. supervise the team to ensure responsible use of resources	2	2	-	1
PC17. motivate the team to carry out routine cleaning of tools, machine and equipment	2	2	-	1
PC18. guide the team to optimize use of electricity/energy in various tasks/activities/processes	3	4	-	-
PC19. implement periodic checks of the functioning of the equipment/machine and rectify wherever required	2	2	-	1
PC20. guide the team to report malfunctioning and lapses in maintenance of equipment	3	2	-	-
PC21. implement ways to use electrical equipment and appliances properly	2	2	-	-
NOS Total	**40**	**50**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9104
NOS Name	Manage Work, Resources and Safety at workplace
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.

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

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

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

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N6307.Provisioning of Active Network Equipment	35	50	0	15	100	30
TEL/N6309.Monitoring and Reporting the Status of SDH, DWDM and L2 Equipment	30	55	0	15	100	30
TEL/N9103.Implement Effective Interaction at workplace	30	60	-	10	100	20
TEL/N9104.Manage Work, Resources and Safety at workplace	40	50	-	10	100	20
Total	**135**	**215**	**0**	**50**	**400**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NMS	Network Management System
EMS	Element Management System
L2	Layer 2 i.e. Data link layer standard of OSI architecture
L3	Layer 3 i.e. Network layer standard of OSI architecture
SDH	Synchronous Digital Hierarchy
DWDM	Dense Wavelength Division Multiplexing
NOC	Network Operation Centre
PDH	Plesiochronous Digital Hierarchy
NME	Network Management Engineer
GUI	Graphic User Interface
WTR	Wait To Restore
SHE	Safety Health & Environment
OHS	Organizational Health & Safety
VSWR	Voltage Standing Wave Ratio it is a measure of the reflected power on a transmission line.
O&M	Operation & Maintenance
LAN	Local Area Network
MAN	Metropolitan Area Network

WAN	Wide Area Network
RIP	Routing Information Protocol
OSPF	Open Shortest Path First
VCG	Virtual Cotainer Group
EoS	Ethernet over SDH
IGRP	Interior Gateway Routing Protocol
EDFA	Erbium Doped Fiber Amplifier
ROADM	Reconfigurable Optical Add-Drop Multiplexer
MDU	Multiplexer Dimultiplexer Unit
SFP	Small Form Factor Pluggable
DCN	Data Communication Network

Glossary

Sector	Sector is a conglomeration of different business operations having similar business 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.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications 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.
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 have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation 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/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.