

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR ELECTRONICS INDUSTRY



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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- Data Networking Cable Technician

SECTOR: ELLECRTONICS

SUB-SECTOR: IT & Hardware

OCCUPATION: After Sales Support

REFERENCE ID: ELE/Q4613

ALIGNED TO: NCO- 2004/NIL

This job roles in the electronics sector works as support to the data networking engineer (field engineer) by laying appropriate LAN cables in identified customer's site following standard operating procedures.

Brief Job Description: A data networking and cable technician is responsible for laying cables (optical fibre or copper cables) for LAN communication in offices and commercial buildings. The candidate should be aware of various kinds of cables available, their uses in LAN connectivity and how are signal transmitted.

Personal Attributes: Must exhibit good customer service attributes—courteous, solution oriented, polite, reliable, good decision-making skills, etc. Must be focused and outcome oriented. Possess an alert mind, a physically active and flexible body. Should have good eyesight and pay importance to details. Should also possess steady arm-hand coordination while carrying out work. Should be responsible for own outcomes and be able to work in a team.

Job Details	Qualifications Pack Code	ELE/Q4613		
	Job Role	Data Networking Cable Technician		
	Credits	TBD	Version number	1.0
	Sector	Electronics	Drafted on	11/01/2016
	Sub-sector	IT & Hardware	Last reviewed on	11/01/2016
	Occupation	After Sales Support	Next review date	11/01/2018
	NSQC Clearance On	NA		
	Job Role	Data Networking Cable Technician		
Role Description		Responsible for laying optical fibre or copper cables for LAN connection in offices and commercial buildings. The candidate must adhere to relevant quality standards and regulatory requirements.		
NSQF level		4		
Minimum Educational Qualifications		ITI/ Diploma in Computer Hardware		
Maximum Educational Qualifications		NA		
Training (Suggested but not mandatory)		NA		
Minimum Job Entry Age		18 Years		
Experience		NA		
Applicable National Occupational Standards (NOS)		Compulsory: ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site ELE/N4624 Identify fault and carry out troubleshooting ELE/N1001 Use basic health and safety practices in electrical and electronics work ELE/N9962 Coordinate with others Optional: NA		
Performance Criteria		As described in the relevant OS units		

Definitions

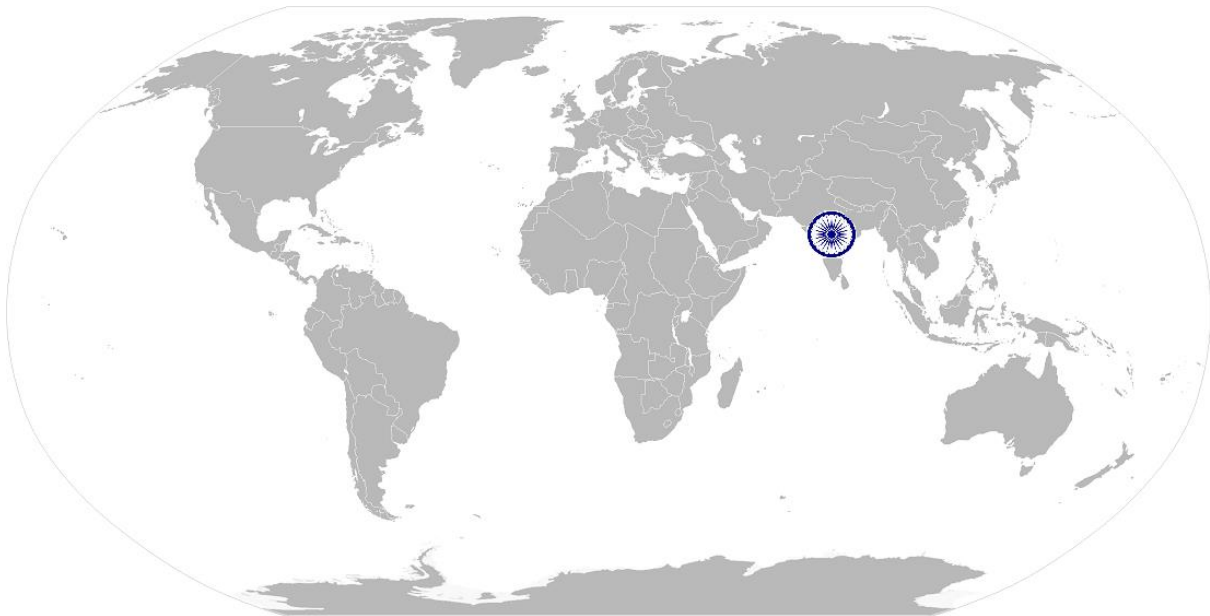
Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
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 NOS.
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 that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational 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 standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the 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 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.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with 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.

Acronyms

Keywords /Terms	Description
NSQF	National Skill Qualification Framework
NOS	National Occupational Standards
PPE	Personal Protective Equipment
LIU	Line Interface Unit
CAT6	Category 6
OM	Optical Mode
LAN	Local Area Networking
WAN	Wide Area Network
AUTOCAD	Automation Computer Aided Design
OTDR	Optical Time Domain Reflectometer
LSPM	Light Source and Power Meter
ISI	inter-symbol interference
HDTDX	High Definition Time Domain Crosstalk
HDTDR	High Definition Time Domain Reflectometry
ESD	Electrostatic Discharge
I/O	Information Outlet
RJ	Registered Jack
STP	Shielded Twisted Pair
UTP	Unshielded Twisted Pair
MBR	Minimum Bend Radius
AC&DC	Alternating Current & Direct Current

ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site

National Occupational Standard



Overview

This unit refers to the job responsibilities of a data networking cable technician while carrying out LAN cabling in offices and buildings using approved techniques and tools.

ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site

National Occupational Standard

Unit Code	ELE/N4623
Unit Title (Task)	Lay fibre optic and/or copper cables for LAN connection in customer's site
Description	This OS unit covers the job duties of a data networking cable technician which include identify and install fibre optic or copper cables for LAN connection in a given work site such as offices, residential places, buildings, etc. using approved methods and tools.
Scope	This unit/task covers the following: • Interact with the customer • Work safely • Prepare work area for LAN cabling • Lay cable for LAN communication • Terminate communication cables • Test cable • Troubleshoot faults • Post installation activities
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interact with the customer	To be competent, the user/ individual on the job must be able to: PC1. introduce self and organization correctly and state the purpose of visit PC2. plan a customer's LAN connectivity cabling coverage requirements in detail as per needs communicated PC3. speak politely and respectfully with the customer at all times PC4. provide accurate information at all times in accordance with organization's quality standards and procedures
Work safely	To be competent, the user/ individual on the job must be able to: PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines PC6. select and use appropriate personal protection equipment suitable to the type of work specified and in line with occupational health and safety guidelines Personal protective equipment: e.g. ESD bands & mats, gloves, aprons, rubber footwear, etc. PC7. follow electrical safety practices while handling power operated tools & equipment PC8. comply with safe working practices when dealing with cable cutting and stripping tools PC9. ensure that risks control measures and procedures are followed in line with relevant regulatory and organization's requirements PC10. ensure that approved cable handling procedures are maintained during installation

ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site

	Procedures (fibre optic cable): cable tensile strength check, minimum bend radius (MBR) check, use of cable protection and support, appropriate identification and labeling, provision of spare cable, etc.
Prepare work area for LAN cabling	To be competent, the user/ individual on the job must be able to: PC11. obtain job specification document and AUTOCAD drawing from appropriate authority or personnel PC12. interpret cable wiring diagrams correctly as per given specifications Resources: e.g. AUTOCAD, drawings, circuit and physical layouts, charts, specifications, electronic/electrical symbols, wiring regulations, etc. PC13. undertake survey as per job requirements PC14. prepare bills of materials needed to carry out the tasks Bills of materials: e.g. cable manager/jack panels/patch panels, cables, I/O (information outlet), face plate, patch cord, line interface unit (LIU)/ pigtails PC15. ensure that the identified materials are verified by the customer PC16. obtain tools, equipment, cables, testing devices and accessories required to carry out the given work Tools: crimping tools, punching tool, wire cutter, screwdriver, sheath remover, jacket strippers, etc. Testing devices: multimeter, cable tester, etc. Accessories: RJ 45, I/O port, face plate, patch cord, jumpers, etc. PC17. verify that selected tools, cables, accessories and testing devices are safely calibrated and ready for use Cables: optical fibre (e.g. OM1, OM2, OM3, OM4, OM5, etc.) and copper cables (e.g. Cat6, Cat5, UTP, etc.) PC18. select the appropriate types of cables following relevant telecommunications cabling standard Standards: ISO Standards, ANSI/TIA/EIA-568-B, for LAN connection distance (e.g. copper cable >90, optical fibre <90 m); higher bandwidth connectivity=optical fibre, lower bandwidth connectivity=copper cable, power surge protection, etc. PC19. check that correct color coding is given as per relevant cabling standards
Lay cable for LAN communication	To be competent, the user/ individual on the job must be able to: PC20. use approved test methods to carry out recommended checks on cable prior to laying Checks: fibre strand polarity, proper wire twisting rate, connectors performance meet cabling standard, continuity, defects, length certification, insertion loss and return loss, return loss and reflectance, etc. PC21. check that appropriate fiber test adapter with a connector matching the fibre cord or the patch panel is used as per standard protocols PC22. ensure that testing results of one end of cable is accurately saved to be used as reference in bidirectional testing where required PC23. use appropriate cable securing accessories to lay cables as per given AUTOCAD diagram

ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site

	Accessories: containment, conduits, cable tray, race way, etc. PC24. apply approved techniques to lay cables from source to destination in compliance with cabling applications and standards Source: switches, modem, ISP network, etc. PC25. ensure that approved cable handling procedures are maintained during installation Procedures (fibre optic cable): cable tensile strength check, minimum bend radius (MBR) check, use of cable protection and support, appropriate identification and labeling, provision of spare cable, etc. PC26. select appropriate cable length to carry out cable connecting, splicing, patching, etc. as per application and certification standard PC27. confirm that correct cleaning materials are used to clean cables PC28. verify that appropriate technique is used to splice cable Techniques: fusion splice technique, mechanical splice technique
Terminate communication cables	To be competent, the user/ individual on the job must be able to: PC29. use approved methods and tools to terminate cables to appropriate telecommunications outlet PC30. comply with transmission performance for connecting hardware as per relevant cabling standards PC31. mount hardware or communication equipment correctly on supporting structures such as panels, walls, cabinets, frames, etc. in line with manufacturer's instructions and quality requirements PC32. ensure that minimum two cables are connected using appropriate connectors in accordance with standard operating procedures PC33. confirm that cable joint enclosures are sealed safely as per required quality standard
Test cable	To be competent, the user/ individual on the job must be able to: PC34. use appropriate test to check the laid cables before jointing/terminating as per required parameters Test methods: fibre verification testing using light source and power meter (LSPM); optical time domain reflectometer (OTDR); auto-test (e.g. DTX series testers) using correct link model (permanent or channel), etc. PC35. use appropriate techniques to measure insertion loss and test optic link performance
Carryout Post installation activities	To be competent, the user/ individual on the job must be able to: PC36. document required information of work completed report fully and accurately in appropriate format as per organization's policies and procedures PC37. report any problems or issues to appropriate authority and seek guidance on how to resolve the problems PC38. report defects identified in tools, equipment or work area to appropriate personnel in line with organization's policies and procedures PC39. return used tools and materials to appropriate storage location PC40. leave the work area in a safe condition

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	PC41. dispose hazardous waste materials correctly as per environmental health and safety policies
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. relevant health and safety requirements applicable in the work place KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities KA4. reporting structure, inter-dependent functions, lines and procedures in the work area KA5. importance of working in clean and safe environment practices and procedures KA6. relevant people and their responsibilities within the work area KA7. escalation matrix and procedures for reporting work and employment related issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. use and interpret information from resources and job specification documents Resources: drawings, circuit and physical layouts, charts, customer's specifications, graphical electronic/electrical symbols and standard soldering regulations KB2. basic principles of communications systems Communications systems: transmitter, receiver, communication channel KB3. different kinds of information transmitted through communication systems Information: sound, video, picture or data KB4. basic principles of data communication KB5. approved techniques used to convert analog to digital and vice versa KB6. concept of bandwidth and applications KB7. various kinds of communication methods used over channel Methods: simplex (one way), duplex (two way), half/semi-duplex (two ways but one at a time), broadcast, serial, parallel KB8. basic concepts of electrical theory and current KB9. main category of cables used in communication systems Category: fibre optic and copper cable KB10. range of connectors and their uses KB11. range of fibre optic cables used in data communication KB12. characteristics of copper cable and effects on signal KB13. approved tests used to prevent fibre optic link error Tests: calibration, launch stability, test lead connection, spatial resolution, elimination of ghosting, fibre mismatch, minimization of dead zone, etc. KB14. important features and specifications of fibre optic cable Features: cladding diameters, secondary and primary coating diameters,

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	refractive index, numerical aperture, attenuation, operational wavelengths KB15. fundamentals of data networking KB16. application methods of serial and parallel data networking KB17. differences between LAN and WAN and their uses KB18. component parts of cable used in communication systems KB19. various kinds of optical fibers Kinds: single-mode, multimode, graded index, stepped index KB20. interpreting cable labeling and colour coding KB21. common problems in copper and optical fibre cabling KB22. troubleshooting techniques used in cabling KB23. cabling transmission performance and tests requirements KB24. appropriate installation points for connecting hardware Installation points: main cross connect, intermediate cross connect, horizontal cross connect, horizontal cabling transition points, consolidation points, telecommunications outlets KB25. basic topologies used in data networking Topologies: star, bus, ring, grid, mesh, point to point, branching tree, etc. KB26. manufacturer's standard operating procedures (SOP) and their applications KB27. importance of correct labeling of components and peripherals KB28. range of IP address and categorization of class KB29. use of appropriate cable length in LAN connection KB30. safe disposal of waste materials KB31. document required information of work fully and accurately in appropriate respective service logbook, report sheets, etc. KB32. SI units and symbols used in measurement Units: e.g. metre (m), kilogram (kg), second(s), ampere (A), tera (A), giga (G), mega (M), nano (N), etc. KB33. use of terminology, jargons, unit, graphical representation, signs and symbols related to data communication systems
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skill The user/ individual on the job needs to know and understand how to: SA1. fill up appropriate forms, activity logs, attendance sheets as per organizational format in English and/or local language SA2. document work completion report including key tasks performed, product category, customer feedback/requests, etc.in English or local language SA3. record customer details, service availed, issue of warranty/guarantee in appropriate forms

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	Reading Skill The user/individual on the job needs to know and understand how to: SA4. read and interpret information correctly from job specification documents, health and safety instructions, etc. applicable to the job in English and/or local language SA5. read signages, safety symbols, warnings, etc. displayed in work environment SA6. read and comprehend manufacturer's instructions on equipment and devices correctly
	Oral Communication (Listening and Speaking skills) The user/individual on the job needs to know and understand how to: SA7. communicate with customer clearly and effectively SA8. convey and share technical information clearly using appropriate language SA9. check and clarify task-related information SA10. liaise with appropriate authorities using correct protocol SA11. communicate with people in respectful form and manner in line with organizational protocol
B. Professional Skills	Decision Making The user/individual on the job needs to know and understand how to: SB1. when faced with difficult situations seek clarification from immediate supervisor or responsible authority on how to resolve problems SB2. decide the feasibility of customer's needs with respect to given work environment SB3. determine the suitability of installation site based on own learning and work requirements
	Problem Solving The user/individual on the job needs to know and understand how to: SB4. identify problems with work planning, procedures, output and behavior and their implications SB5. prioritize and plan for problem solving SB6. communicate problems appropriately to others SB7. identify sources of information and support for problem solving SB8. seek assistance and support from other sources to solve problems SB9. Identify and apply effective resolution techniques SB10. seek evidence for problem resolution
	Plan and Organize The user/individual on the job needs to know and understand how to: SB11. plan, prioritize and sequence work operations as per job requirements SB12. organize and analyze information relevant to work SB13. basic concepts of work productivity including waste reduction, efficient material usage and optimization of time

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	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB14. receptive to customer's needs within the scope of the work SB15. provide customer with information on how to enhance quality and efficiency of equipment/system SB16. respect customer's decision and privacy, maintain professional relationship and adhere to relevant confidentiality clauses
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB17. identify potential problems at work and review related information to develop, evaluate and implement solutions
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB18. apply logic and reasoning to identify the pros and cons of alternative solutions or approaches to problems at work

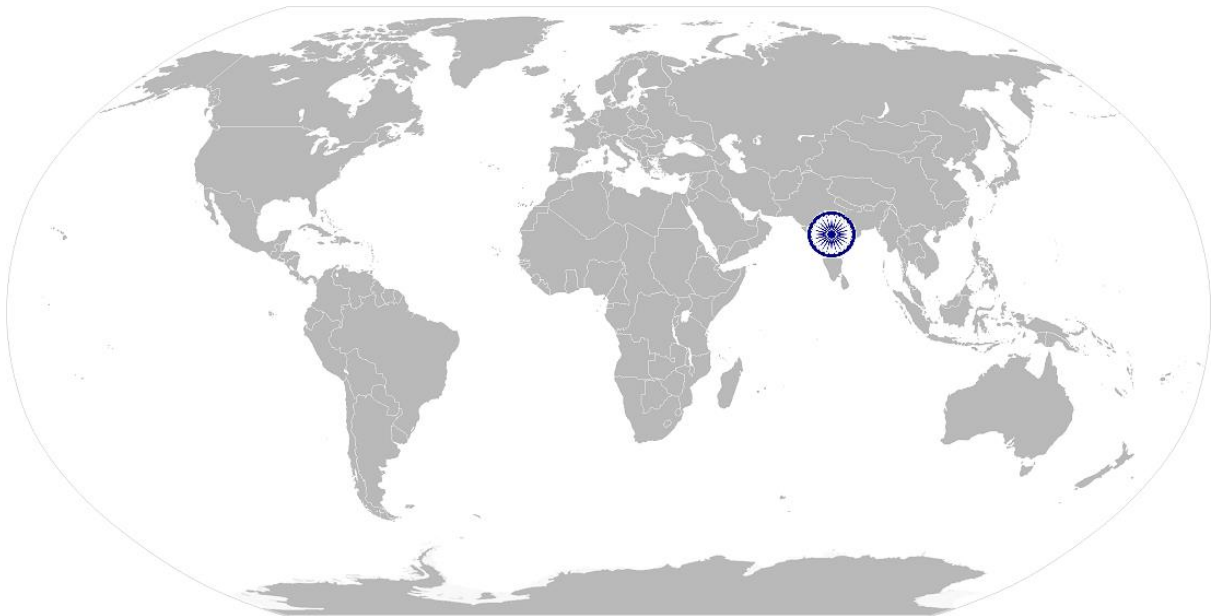
NOS Version Control

NOS Code	ELE/N4623		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	11/01/2016
Industry Sub-sector	IT & Hardware	Last reviewed on	11/01/2016
Occupation	After Sales Support	Next review date	11/01/2018

ELE/N4624

Identify fault and carry out troubleshooting

National Occupational Standard



Overview

This unit refers to the job responsibilities of a data networking cable technician while carrying out LAN cabling in offices and buildings using approved techniques and tools.

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Identify fault and carry out troubleshooting

National Occupational Standard

Unit Code	ELE/N4624
Unit Title (Task)	Identify fault and carry out troubleshooting
Description	This OS unit covers the job duties of a data networking cable technician which include identify and install fibre optic or copper cables for LAN connection in a given work site such as offices, residential places, buildings, etc. using approved methods and tools.
Scope	This unit/task covers the following: • Interact with the customer • Work safely • Identify faults • Troubleshoot faults • Carryout post repair activities
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interact with the customer	To be competent, the user/ individual on the job must be able to: PC1. introduce self and organization correctly, and state the purpose of visit PC2. plan a customer's LAN connectivity/cabling coverage requirements in detail as per needs communicated PC3. speak politely and respectfully with the customer at all times PC4. provide accurate information at all times in accordance with organization's quality standards and procedures
Work safely	To be competent, the user/ individual on the job must be able to: PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines PC6. select and use appropriate personal protection equipment suitable to the type of work specified and in line with occupational health and safety guidelines Personal protective equipment: e.g. ESD bands & mats, gloves, aprons, rubber footwear, etc. PC7. follow electrical safety practices while handling power operated tools & equipment PC8. adhere to safe working practices while working at heights, confined areas, trenches, etc. PC9. comply with safe working practices when dealing with cable cutting and stripping tools PC10. ensure that risks control measures and procedures are followed in line with relevant regulatory and organization's requirements
Identify faults	To be competent, the user/ individual on the job must be able to: PC11. use approved procedures to investigate and establish the possible causes of faults

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Identify fault and carry out troubleshooting

	PC12. ensure that fault finding is completed within the agreed time and in compliant with service level agreement
Troubleshoot Faults	To be competent, the user/ individual on the job must be able to: PC13. apply correct manufacturer's troubleshooting techniques in faults due to common cable problems Common problems (optical fibre): e.g. contaminated fibre connection, connections overload in a channel, misalignment of fibres (e.g. poor quality connectors, faulty termination, end-face geometry, etc.), roughness, radius of curvature, apex offset, improper fibre height (e.g. unseated connectors, poor cable management, polarity, bend, breaks, inter-symbol interference (ISI), etc.) Common problems (copper): e.g. improper management of wire pair or twist rate, inappropriate connector quality with standard requirement, incorrect setting up of tester, defects or damage in cable, faulty patch cord, incorrect connection of wires to connector pins, exceeding length limitations, etc. Troubleshooting techniques (optical fibre): clean cable of dust/dirt, apply correct testing standards as per job specification, use good quality fibre, components, test chords, etc., use test limits appropriate to relevant cabling and applications standards Troubleshooting techniques (copper): investigate HDTDx (high definition time domain crosstalk) and HDTD R (high definition time domain reflectometry) parameters, terminate wires properly, use connectors & cables appropriate to specifications and standards, prevent cable coiling or looping, etc.
Carryout Post repair activities	To be competent, the user/ individual on the job must be able to: PC14. document required information of work completed report fully and accurately in appropriate format as per organization's policies and procedures PC15. report any problems or issues to appropriate authority and seek guidance on how to resolve the problems PC16. report defects identified in tools, equipment or work area to appropriate personnel in line with organization's policies and procedures PC17. return used tools and materials to appropriate storage location PC18. leave the work area in a safe condition PC19. dispose hazardous waste materials correctly as per environmental health and safety policies
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. relevant health and safety requirements applicable in the work place KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities KA4. reporting structure, inter-dependent functions, lines and procedures in the work area

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Identify fault and carry out troubleshooting

	KA5. how to engage with specialists for support in order to resolve incidents and service requests KA6. importance of working in clean and safe environment practices and procedures KA7. relevant people and their responsibilities within the work area KA8. escalation matrix and procedures for reporting work and employment related issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. importance of using personal protective equipment and safeguarding self and others from injury KB2. hazards and risks associated with electronic embedded product designing work Hazards: faulty electrical components, exposure to live conductors, misuse of tools, etc. KB3. use and interpret information from resources and job specification documents Resources: drawings, circuit and physical layouts, charts, customer's specifications, graphical electronic/electrical symbols and standard soldering regulations KB4. basic principles of communications systems Communications systems: transmitter, receiver, communication channel KB5. different kinds of information transmitted through communication systems Information: sound, video, picture or data KB6. basic principles of data communication KB7. differences between analog and digital signals KB8. approved techniques used to convert analog to digital and vice versa KB9. concept of bandwidth and applications KB10. various kinds of communication methods used over channel Methods: simplex (one way), duplex (two way), half/semi-duplex (two way but one at a time), broadcast, serial, parallel KB11. basic concepts of electrical theory and current KB12. difference between AC and DC KB13. main category of cables used in communication systems Category: fibre optic and copper cable KB14. range of connectors and their uses KB15. various possible causes of common faults in termination Common faults: chip, crack, scratch, pitting, concentricity error, etc. KB16. range of fibre optic cables used in data communication KB17. characteristics of copper cable and effects on signal KB18. approved tests used to prevent fibre optic link error Tests: calibration, launch stability, test lead connection, spatial resolution, elimination of ghosting, fibre mismatch, minimization of dead zone, etc. KB19. important features and specifications of fibre optic cable

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	The user/individual on the job needs to know and understand how to:
	SA4. read and interpret information correctly from job specification documents,

ELE/N4624

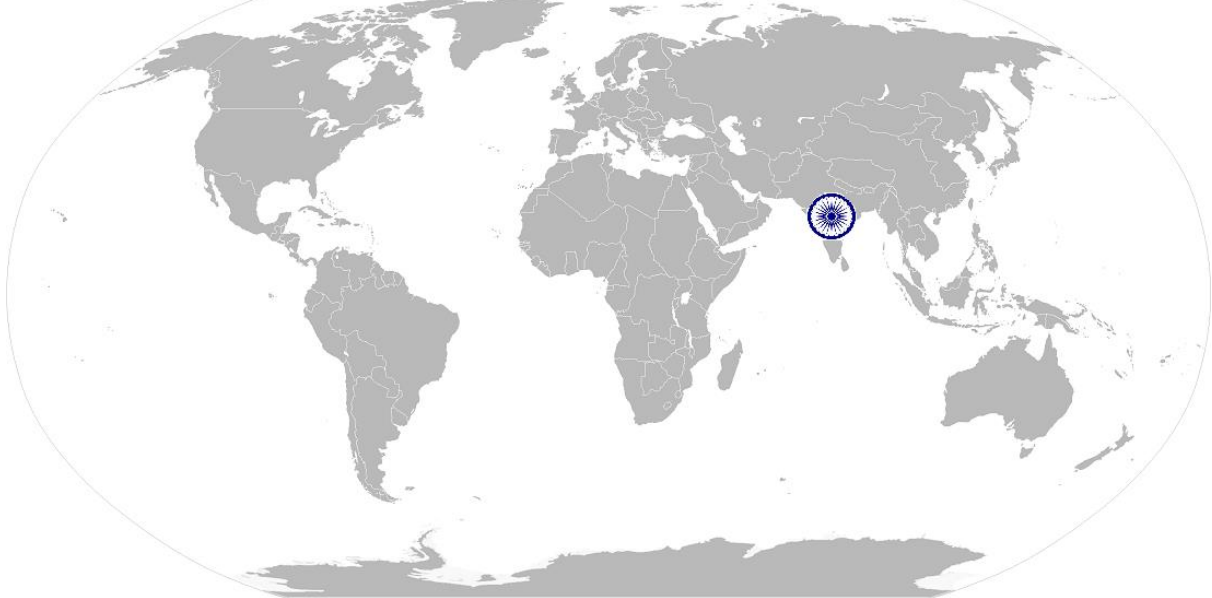
Identify fault and carry out troubleshooting

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	The user/individual on the job needs to know and understand how to: SA7. communicate with customer clearly and effectively SA8. convey and share technical information clearly using appropriate language SA9. check and clarify task-related information SA10. liaise with appropriate authorities using correct protocol SA11. communicate with people in respectful form and manner in line with organizational protocol
	B. Professional Skills
	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. when faced with difficult situations seek clarification from immediate supervisor or responsible authority on how to resolve problems SB2. decide the feasibility of customer's needs with respect to given work environment SB3. determine the suitability of installation site based on own learning and work requirements
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. identify problems with work planning, procedures, output and behavior and their implications SB5. prioritize and plan for problem solving SB6. communicate problems appropriately to others SB7. identify sources of information and support for problem solving SB8. seek assistance and support from other sources to solve problems SB9. identify effective resolution techniques SB10. select and apply resolution techniques SB11. seek evidence for problem resolution
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB12. plan, prioritize and sequence work operations as per job requirements SB13. organize and analyze information relevant to work SB14. basic concepts of work productivity including waste reduction, efficient material usage and optimization of time
	Customer Centricity

ELE/N4624

Identify fault and carry out troubleshooting

	The user/individual on the job needs to know and understand how to: SB15. receptive to customer's needs within the scope of the work SB16. provide customer with information on how to enhance quality and efficiency of equipment/system SB17. respect customer's decision and privacy, maintain professional relationship and adhere to relevant confidentiality clauses
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB18. identify potential problems at work and review related information to develop, evaluate and implement solutions
	Critical Thinking
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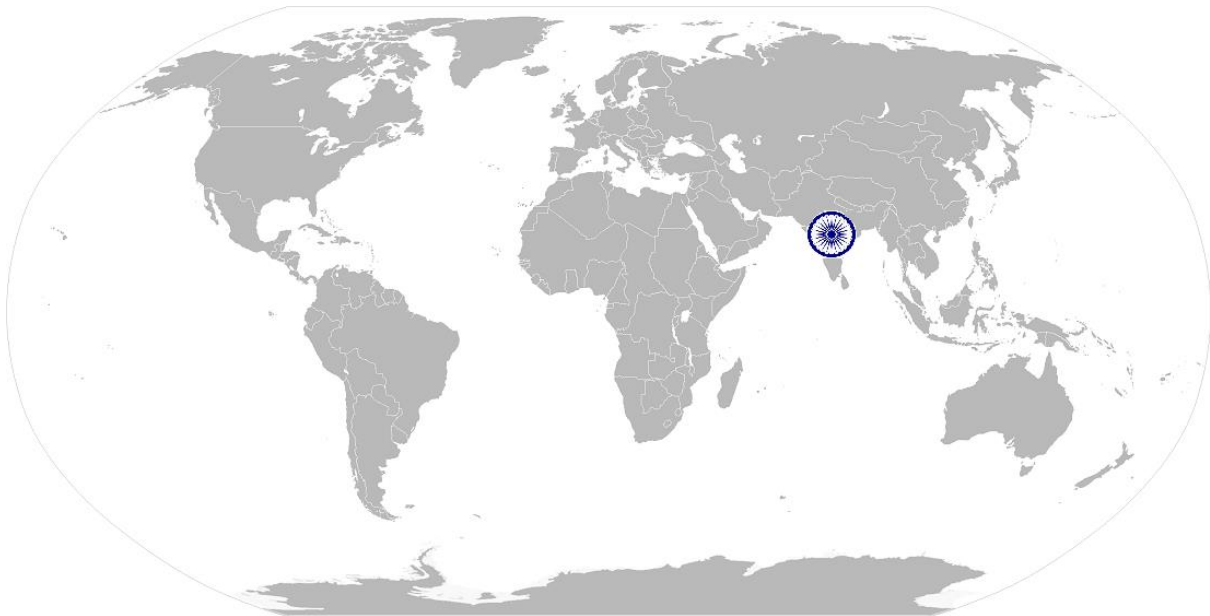


ELE/N4624

Identify fault and carry out troubleshooting

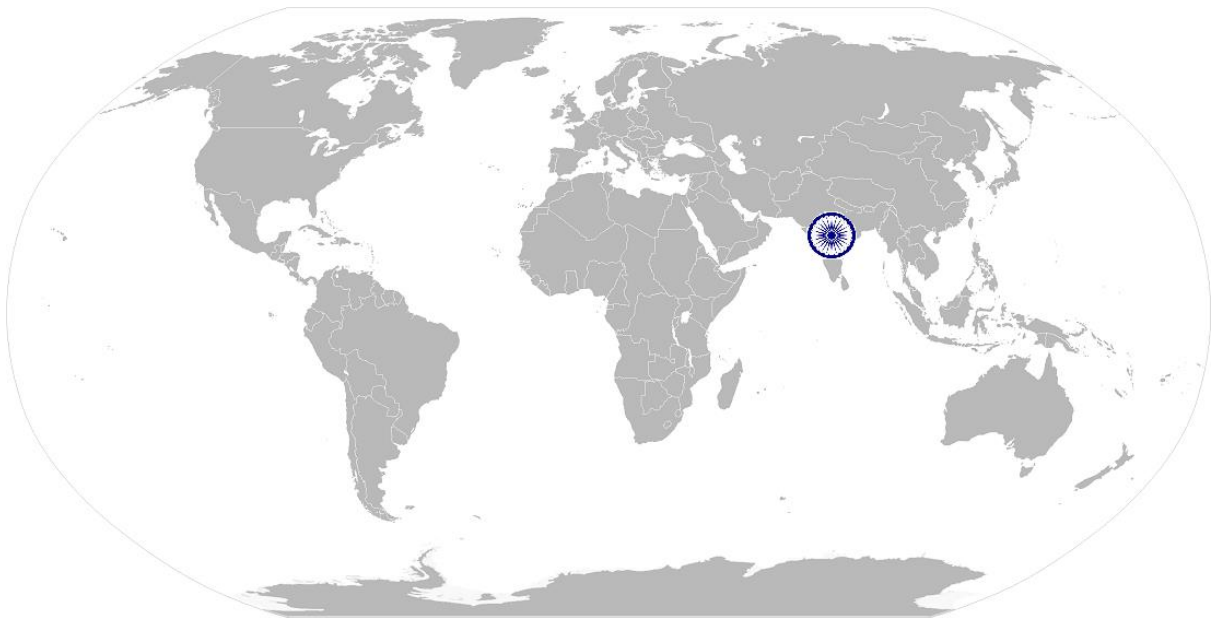
NOS Version Control

NOS Code	ELE/N4624		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	11/01/2016
Industry Sub-sector	IT & Hardware	Last reviewed on	11/01/2016
Occupation	After Sales Support	Next review date	11/01/2018



ELE/N1001 Use basic health and safety practices in electrical and electronics work

National Occupational Standard



Overview

This unit covers health, safety and security practices associated with electrical and electronics system. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment in a given site while working with electrical and electronic equipment.

ELE/N1001 Use basic health and safety practices in electrical and electronics work

National Occupational Standard	Unit Code	ELE/N1001
	Unit Title (Task)	Use basic health and safety practices in electrical and electronics work
	Description	This unit covers health, safety and security guidelines pertaining to electrical and electronics work. This includes procedures and practices that candidates need to follow to maintain a healthy, safe and secure work environment in a work site or building structure while working on installation and maintenance of electronic security systems.
	Scope	This unit/task covers the following: • Health and safety • Fire safety • Emergencies, rescue and first-aid procedures
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Health and safety	To be competent, the user/ individual on the job must be able to: PC1. use protective clothing/equipment for specific tasks and work conditions Protective clothing: safety glasses, head protection, ear muffs, safety footwear, knee pads, gloves, flash lights, apron, etc. PC2. state the name and location of people responsible for health and safety in the workplace PC3. state the names and location of documents that refer to health and safety in the workplace PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards: electrical hazards (dealing with high voltage equipment, power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.); sharp edged and heavy tools; heated metals; hazardous surfaces (sharp, slippery, uneven, chipped, broken, etc.) Possible causes of risk and accident: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); not taking safety precautions PC5. follow safe methods while repairing building surfaces in compliant with related building regulations and customer's specifications PC6. risks of electric shock when working with electrical tools/equipment and system PC7. follow warning signs (danger, out of service, etc.) while accessing sensitive areas PC8. comply with safe working standards when dealing with potential

ELE/N1001 Use basic health and safety practices in electrical and electronics work

	hazards such as working at heights, lifting and handling heavy equipment PC9. ensure positive isolation of electrical equipment & system as per given standards PC10. state methods for controlling safe access and egress from site PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others Safe working practices: putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; dry work area, switch off the power supply when not required, etc.; use equipment that is working properly and is well maintained; etc. PC12. state methods of accident prevention in the work environment of the job role Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors PC13. state location of general health and safety equipment in the workplace General health and safety equipment: fire extinguishers; first aid equipment; safety instruments and clothing; safety installations (e.g. fire exits, exhaust fans) PC14. inspect for faults, set up and safely use scaffolds, elevated platforms and ladders Faults: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc. PC15. apply good housekeeping practices at all times Good housekeeping practices: clean/tidy work areas, removal/disposal of waste products, protect surfaces PC16. identify common hazard signs displayed in various areas Various areas: labels on equipment; packages; inside buildings; in open areas and public spaces, etc. PC17. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly
Fire safety	To be competent, the user/ individual on the job must be able to: PC18. use the various appropriate fire extinguishers on different types of fires correctly PC19. demonstrate rescue techniques applied during fire hazard PC20. demonstrate good housekeeping in order to prevent fire hazards PC21. demonstrate the correct use of a fire extinguisher

ELE/N1001 Use basic health and safety practices in electrical and electronics work

Emergencies, rescue and first-aid procedures	To be competent, the user/ individual on the job must be able to: PC22. demonstrate how to free a person from electrocution PC23. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc. PC24. demonstrate basic techniques of bandaging PC25. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments PC26. perform and organize loss minimization or rescue activity during an accident in real or simulated environments PC27. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases PC28. demonstrate the artificial respiration and the CPR Process PC29. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work PC30. complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report includes details of name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified PC31. demonstrate correct method to move injured people and others during an emergency
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace KA2. names and location of documents that refer to health and safety in the workplace
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. meaning of “hazards” and “risks” KB2. health and safety hazards commonly present in the work environment and related precautions KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible KB4. methods of accident prevention KB5. safe working practices when working with tools and equipment KB6. safe working practices while working at various hazardous sites KB7. where to find all the general health and safety equipment in the

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	workplace KB8. various dangers associated with the use of electrical equipment KB9. safe handling and disposal of hazardous wastes KB10. safe methods used to repair building surfaces KB11. precautionary activities taken to prevent fire accident KB12. various causes of fire Causes of fires: heating of metal; spontaneous ignition; sparking; electrical heating; loose fires (smoking, welding, etc.); chemical fires; etc. KB13. techniques of using the different fire extinguishers KB14. different materials used for extinguishing fire Materials: sand, water, foam, CO₂, dry powder KB15. building fire safety regulations KB16. emergency rescue techniques applied during a fire hazard KB17. various types of safety signs and what they mean KB18. appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries KB19. content of written accident report KB20. personal safety, health and dignity issues relating to the movement of a person by others KB21. potential impact to a person who is moved incorrectly
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/individual on the job needs to know and understand how to:
	SA1. write basic accident report as per organization's standard procedures format in English and/or local language
	SA2. record/write defaults observed in work tools; health and safety issues in the work area; etc. as per required organization's policy
	Reading Skills
	The user/individual on the job needs to know and understand how to:
B. Professional Skills	SA3. read and comprehend basic content; read labels, charts, signages, etc.
	SA4. read and comprehend basic English to read manuals of operations
	SA5. read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA6. question coworkers appropriately in order to clarify instructions and other issues
	SA7. give clear instructions to coworkers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to:

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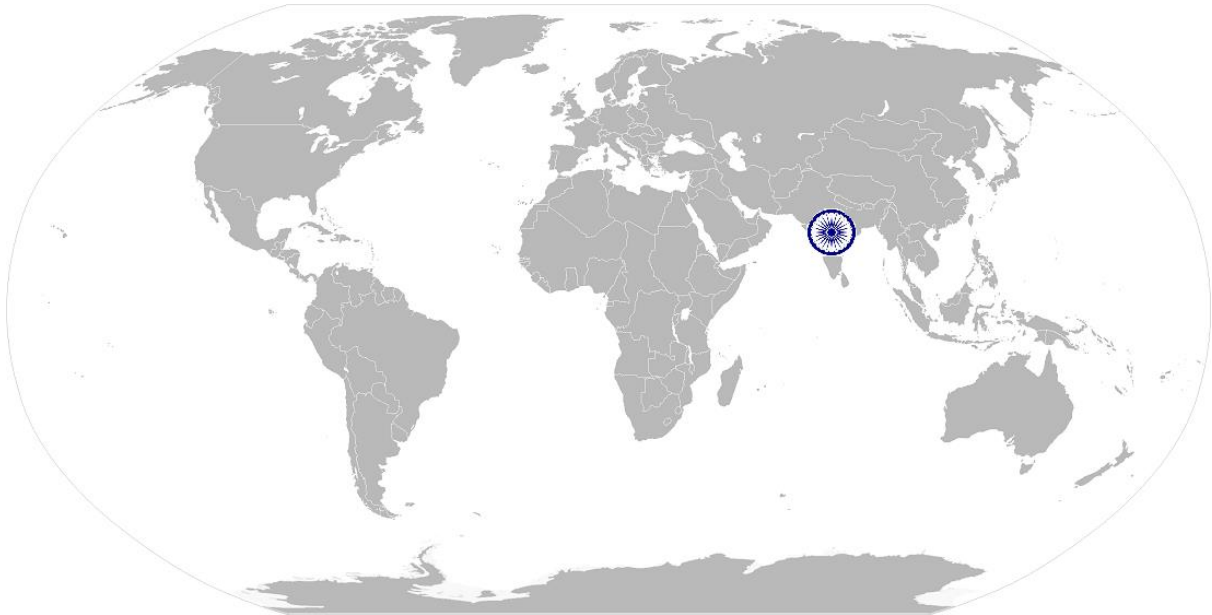
	SA8. make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines, etc.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SA9. plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SA10. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SA11. identify immediate or temporary solutions to resolve delays SA12. identify sources of support that can be availed of for problem solving for various kind of problems SA13. seek appropriate assistance from other sources to resolve problems SA14. report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SA15. identify cause and effect relations in their area of work SA16. use cause and effect relations to anticipate potential problems and their solution
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SA17. apply logic and reasoning to identify the pros and cons of alternative solutions or approaches to problems at work

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NOS Version Control

NOS Code	ELE/N1001		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	11/01/2016
Industry Sub-sector	Passive Components, Semiconductors, PCB Manufacturing, Consumer Electronics, IT Hardware, PCB Assembly, Solar Electronics, Strategic Electronics, Automotive Electronics, Industrial Electronics, Medical Electronics, Communication Electronics, PCB Design, LED	Last reviewed on	11/01/2016
Occupation	All Occupations	Next review date	11/01/2018

National Occupational Standard



Overview

This unit is about the individual's level of communication with colleagues and other departments within the organisation. It determines the ability to work as a team member to achieve the required deliverables on schedule.

ELE/N9962

Coordinate with others

National Occupational Standard

Unit Code	ELE/N9962
Unit Title (Task)	Coordinate with others
Description	This OS unit is about communicating with colleagues and seniors in order to achieve smooth work flow.
Scope	This unit/task covers the following: - Interact with supervisor or superior - Interact with co workers
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interact with supervisor or superior	To be competent, the user/ individual on the job must be able to: PC1. identify work requirements, targets and incentives PC2. identify product models, their features and functions PC3. report problems identified in the field to the authorized authority PC4. escalate customer concerns that cannot be handled on field PC5. resolve personnel issues PC6. receive feedback on work standards and customer satisfaction PC7. communicate any potential hazards at a particular location PC8. meet given targets PC9. deliver work of expected quality despite constraints PC10. collect feedback from the customers
Interact with co workers	To be competent, the user/ individual on the job must be able to: PC11. resolve inter-personnel conflicts and facilitate smooth workflow PC12. receive spares and tools from the identified location PC13. return faulty modules and tools PC14. pass on customer complaints to colleagues in a respective geographical area PC15. assist colleagues with resolving field problems
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. reporting structure, inter-dependent functions, lines and procedures in the work area KA3. relevant people and their responsibilities within the work area KA4. escalation matrix and procedures for reporting work and employment related issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. various categories of people that one is required to communicate and co-ordinate within the organization KB2. importance of effective communication in the workplace

ELE/N9962

Coordinate with others

	KB3. importance of teamwork in organizational and individual success KB4. various components of effective communication KB5. key elements of active listening KB6. value and importance of active listening and assertive communication KB7. barriers to effective communication KB8. importance of tone and pitch in effective communication KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer KB11. importance of ethics for professional success KB12. importance of discipline for professional success KB13. what constitutes disciplined behavior for a working professional KB14. common reasons for interpersonal conflict KB15. importance of developing effective working relationships for professional success KB16. expressing and addressing grievances appropriately and effectively KB17. importance and ways of managing interpersonal conflict effectively
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	NA
	Reading Skills
	NA
	Oral Communication (Listening and Speaking skills)
	NA
A. Professional Skills	Decision Making
	NA
	Plan and Organize
	NA
	Customer Centricity
	NA
	Problem Solving
	The user/ individual on the job needs to know and understand how to:
	SB1. how to report potential areas of disruptions to work process
	SB2. when to report to supervisor and when to deal with a colleague depending on the type of concern
	Analytical Thinking
	NA
	Critical Thinking
	The user/ individual on the job needs to know and understand how to:
	SB3. how to spot process disruptions and delays

ELE/N9962

Coordinate with others

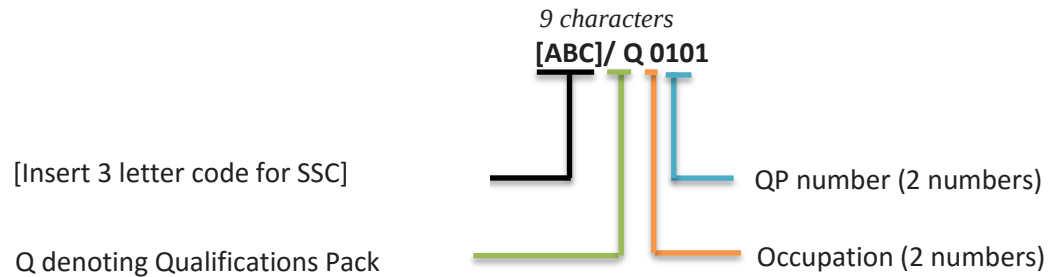
NOS Version Control

NOS Code	ELE/N9962		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	11/01/2016
Industry Sub-sector	Passive Components, Semiconductors, PCB Manufacturing, Consumer Electronics, IT Hardware, PCB Assembly, Solar Electronics, Strategic Electronics, Automotive Electronics, Industrial Electronics, Medical Electronics, Communication Electronics, PCB Design, LED	Last reviewed on	11/01/2016
Occupation	All Occupations	Next review date	11/01/2018

Annexure

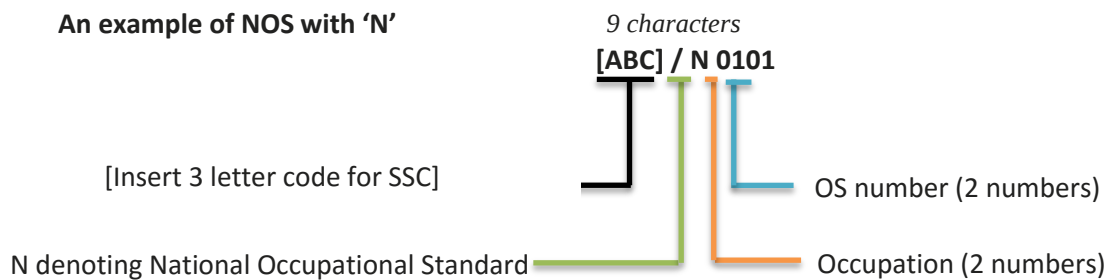
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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

Sub-sector	Range of Occupation numbers
Passive Components	01 - 10
Semiconductors	11 - 20
PCB Manufacturing	21 - 30
Consumer Electronics	31 - 40
IT Hardware	41 - 50
PCB Assembly	51 - 55
Solar Electronics	56 - 60
Strategic Electronics	61 - 65
Automotive Electronics	66 - 70
Industrial Electronics	71 - 75
Medical Electronics	76 - 80
Communication Electronics	81 - 85
PCB Design	86 - 90
LED	91 - 95

Sequence	Description	Example
Three letters	Electronics	ELE
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Data Networking Cable Technician

Qualification Pack: ELE/Q4613

Sector Skill Council: Electronics Sector Skills Council of India

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.
5. 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 Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Practical Skills
ELE/N4623 Lay fibre optic and/or copper cables for LAN connection in customer's site	PC1. introduce self and organization correctly, and state the purpose of visit	100	1	0	1
	PC2. plan a customer's LAN connectivity cabling coverage requirements in detail as per needs communicated		1	0	1
	PC3. speak politely and respectfully with the customer at all times		1	0	1
	PC4. provide accurate information at all times in accordance with organization's quality standards and procedures		2	0	2
	PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines		4	1	3
	PC6. select and use appropriate personal protection equipment suitable to the type of work specified and in line with occupational health and safety guidelines		4	1	3

PC7. follow electrical safety practices while handling power operated tools & equipment	4	0	4
PC8. comply with safe working practices when dealing with cable cutting and stripping tools	2	0	2
PC9. ensure that risks control measures and procedures are followed in line with relevant regulatory and organization's requirements	2	1	1
PC10. ensure that approved cable handling procedures are maintained during installation	1	0	1
PC11. obtain job specification document and AUTOCAD drawing from appropriate authority or personnel	1	0	1
PC12. interpret cable wiring diagrams correctly as per given specifications	1	0	1
PC13. undertake survey as per job requirements	1	0	1
PC14. prepare bills of materials needed to carry out the tasks	1	0	1
PC15. ensure that the identified materials are verified by the customer	1	0	1
PC16. obtain tools, equipment, cables, testing devices and accessories required to carry out the given work	1	0	1
PC17. verify that selected tools, cables, accessories and testing devices are safely calibrated and ready for use	1	0	1
PC18. select the appropriate types of cables following relevant telecommunications cabling standard	2	1	1
PC19. check that correct color coding is given as per relevant cabling standards	2	1	1
PC20. use approved test methods to carry out recommended checks on cable prior to laying	2	1	1
PC21. check that appropriate fiber test adapter with a connector matching the fibre cord or the patch panel is used as per standard protocols	3	1	2
PC22. ensure that testing results of one end of cable is accurately saved to be used as reference in bidirectional testing where required	2	0	2

	PC23. use appropriate cable securing accessories to lay cables as per given AUTOCAD diagram		2	1	1
	PC24. apply approved techniques to lay cables from source to destination in compliance with cabling applications and standards		5	2	3
	PC25. ensure that approved cable handling procedures are maintained during installation		2	1	1
	PC26. select appropriate cable length to carry out cable connecting, splicing, patching, etc. as per application and certification standard		3	1	2
	PC27. confirm that correct cleaning materials are used to clean cables		1	0	1
	PC28. verify that appropriate technique is used to splice cable		3	1	2
	PC29. use approved methods and tools to terminate cables to appropriate telecommunications outlet		4	1	3
	PC30. comply with transmission performance for connecting hardware as per relevant cabling standards		4	1	3
	PC31. mount hardware or communication equipment correctly on supporting structures such as panels, walls, cabinets, frames, etc. in line with manufacturer's instructions and quality requirements		1	0	1
	PC32. ensure that minimum two cables are connected using appropriate connectors in accordance with standard operating procedures		2	1	1
	PC33. confirm that cable joint enclosures are sealed safely as per required quality standard		4	1	3
	PC34. use appropriate test to check the laid cables before jointing/terminating as per required parameters		3	1	2
	PC35. use appropriate techniques to measure insertion loss and test optic link performance		3	1	2

	PC36. document required information of work completed report fully and accurately in appropriate format as per organization's policies and procedures		3	1	2
	PC37. report any problems or issues to appropriate authority and seek guidance on how to resolve the problems		3	0	3
	PC38. report defects identified in tools, equipment or work area to appropriate personnel in line with organization's policies and procedures		2	0	2
	PC39. return used tools and materials to appropriate storage location		2	0	2
	PC40. leave the work area in a safe condition		2	0	2
	PC41. dispose hazardous waste materials correctly as per environmental health and safety policies		11	3	8
		Total	100	22	78
ELE/N4624 Identify fault and carry out troubleshooting	PC1. introduce self and organization correctly, and state the purpose of visit	100	6	1	5
	PC2. plan a customer's LAN connectivity cabling coverage requirements in detail as per need communicated		6	1	5
	PC3. speak politely and respectfully with the customer at all times		5	0	5
	PC4. provide accurate information at all times in accordance with organization's quality standards and procedures		6	2	4
	PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines		5	1	4
	PC6. select and use appropriate personal protection equipment suitable to the type of work specified and in line with occupational health and safety guidelines		5	1	4
	PC7. follow electrical safety practices while handling power operated tools & equipment		5	1	4
	PC8. adhere to safe working practices while working at heights, confined areas, trenches, etc.		6	1	5
	PC9. comply with safe working practices when dealing with cable cutting and stripping tools		5	1	4

	PC10. ensure that risks control measures and procedures are followed in line with relevant regulatory and organization's requirements		7	2	5
	PC11. use approved procedures to investigate and establish the possible causes of faults		5	1	4
	PC12. ensure that fault finding is completed within the agreed time and in compliant with service level agreement		5	1	4
	PC13. apply correct manufacturer's troubleshooting techniques in faults due to common cable problems		5	1	4
	PC14. document required information of work completed report fully and accurately in appropriate format as per organization's policies and procedures		5	2	3
	PC15. report any problems or issues to appropriate authority and seek guidance on how to resolve the problems		5	1	4
	PC16. report defects identified in tools, equipment or work area to appropriate personnel in line with organization's policies and procedures		6	1	5
	PC17. return used tools and materials to appropriate storage location		4	0	4
	PC18. leave the work area in a safe condition		4	0	4
	PC19. dispose hazardous waste materials correctly as per environmental health and safety policies		5	1	4
		Total	100	19	81
ELE/N1001 Use basic health and safety practices in electrical and electronics work	PC1. use protective clothing/equipment for specific tasks and work conditions	100	3	0	3
	PC2. state the name and location of people responsible for health and safety in the workplace		2	0	2
	PC3. state the names and location of documents that refer to health and safety in the workplace		2	0	2
	PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace		3	1	2
	PC5. follow safe methods to repair building surfaces in compliance with related building regulations and customer's specifications		3	1	2
	PC6. risks of electric shock when working with electrical tools/equipment and system		3	1	2
	PC7. follow warning signs (danger, out of service, etc.) while accessing sensitive areas		3	1	2

PC8. comply with safe working standards when dealing with potential hazards such as working at heights, lifting and handling heavy equipment	3	1	2
PC9. test any electrical equipment and system using insulated testing devices before touching them	3	0	3
PC10. ensure positive isolation of electrical equipment & system as per given standards	3	1	2
PC11. state methods for controlling safe access and egress from site	3	1	2
PC12. ensure safe working of access control equipment as per given specifications	2	0	2
PC13. carry out safe working practices while dealing with hazards to ensure the safety of self and others	3	0	3
PC14. state methods of accident prevention in the work environment of the job role	3	1	2
PC15. state location of general health and safety equipment in the workplace	3	1	2
PC16. inspect for faults, set up and safely use scaffolds, elevated platforms and ladders	3	0	3
PC17. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa	2	0	2
PC18. apply good housekeeping practices at all times	4	1	3
PC19. identify common hazard signs displayed in various areas	2	0	2
PC20. retrieve and/or point out documents that refer to health and safety in the workplace	2	0	2
PC21. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly	2	0	2
PC22. use the various appropriate fire extinguishers on different types of fires correctly	3	0	3
PC23. demonstrate rescue techniques applied during fire hazard	4	1	3
PC24. demonstrate good housekeeping in order to prevent fire hazards	3	1	2
PC25. demonstrate the correct use of a fire extinguisher	3	1	2

	PC26. demonstrate how to free a person from electrocution		3	1	2
	PC27. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		3	0	3
	PC28. demonstrate basic techniques of bandaging		3	1	2
	PC29. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC30. perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC31. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	1	2
	PC32. demonstrate the artificial respiration and the CPR Process		3	1	2
	PC33. participate in emergency procedures		3	1	2
	PC34. complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC35. demonstrate correct method to move injured people and others during an emergency		3	1	2
		Total	100	22	78
ELE/N9962 Coordinate with others	PC1.identify work requirements, targets and incentives	100	6	2	4
	PC2. identify product models, their features and functions		6	2	4
	PC3.report problems identified in the field to the authorized authority		11	3	8
	PC4.escalate customer concerns that cannot be handled on field		11	3	8
	PC5.resolve personnel issues		6	2	4
	PC6.receive feedback on work standards and customer satisfaction		6	2	4

	PC7.communicate any potential hazards at a particular location		6	2	4
	PC8.meet given targets		6	2	4
	PC9.deliver work of expected quality despite constraints		6	2	4
	PC10.collect feedback from the customers		6	2	4
	PC11. resolve inter-personnel conflicts and facilitate smooth workflow		6	2	4
	PC12.receive spares and tools from the identified location		6	2	4
	PC13.return faulty modules and tools		6	2	4
	PC14.pass on customer complaints to colleagues in a respective geographical area		6	2	4
	PC15.assist colleagues with resolving field problems		6	2	4
			100	32	68