

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR ELECTRONICS INDUSTRY

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Contents

1. Introduction and Contacts.....P1
2. Qualifications Pack.....P2
3. OS Units.....P3
4. Glossary of Key TermsP17
5. Annexure: Nomenclature for QP & OS.....P19

Introduction

Qualifications Pack-Set Top Box Installer/Service Technician

SECTOR: ELECTRONICS

SUB-SECTOR: Communication & Broadcasting

OCCUPATION: Set Top Box Installation and Service

REFERENCE ID: ELE/Q8101

Set Top Box Installation/Service Technician: Set top box technicians are required for installing/servicing of set top boxes for either DTH (Direct to Home) or DAS (Digital Addressable System) through Cable service providers. With the digitalization of this industry made mandatory, their role and requirement has become imperative for the industry.

Brief Job Description: Set top box technician is responsible for installing the set top box at client's site and also addresses the first level complaints and servicing, he also co ordinates with the technical team for activation of new connections.

Personal Attributes: The job requires the individual to have: mechanical aptitude, dependability and reflective thinking to identify faults. The individual must also soft skills to interact with the customers and other stakeholders within company as the role is customer facing.

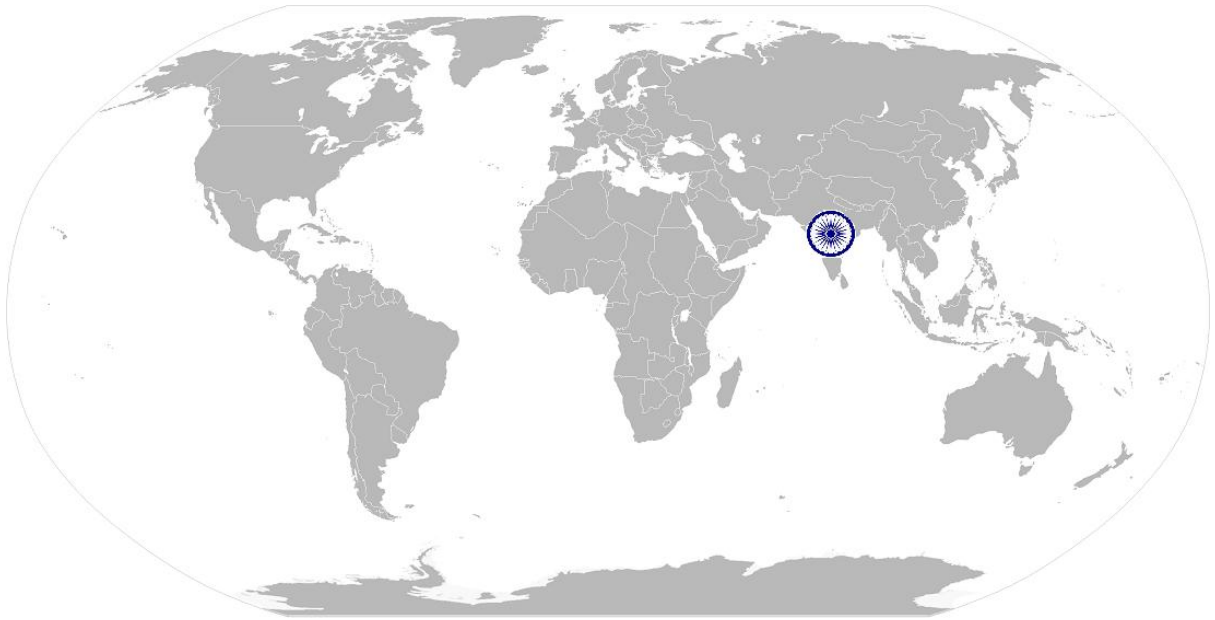
Job Details	Qualifications Pack Code	ELE/Q8101		
	Job Role	Set Top Box Installation and Service Technician		
	Credits(NVEQF/NVQF/NSQF) [OPTIONAL]		Version number	1.0
	Sector	Electronics	Drafted on	19/07/2013
	Sub-sector	Communication & Broadcasting	Last reviewed on	08/08/2013
	Occupation	Set Top Box Installation and Service	Next review date	08/02/2014

Job Role	Set Top Box Installation/Service Technician
Role Description	Set top box technician is responsible for installing the set top box of either DTH or Digital cable TV at client's site (households) and also addresses the first level complaints and servicing, and also co ordinates with the technical team for activation of new connections.
NVEQF/NVQF level	4
Minimum Educational Qualifications*	8 th Standard Passed
Maximum Educational Qualifications*	Diploma
Training (Suggested but not mandatory)	Not Applicable
Experience	Minimum 2 years as helper for 8 th / 9 th Passed
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> ELE/N8101 ----- Set Top Box Installation/Service ELE/N0001 ----- Coordinate with others ELE/N0002 ----- Engaging with customers <p>Optional: Not applicable</p>
Performance Criteria	As described in the relevant OS units

ELE/ N 8101

Set Top Box Installation and Service Technician

National Occupational Standard



Overview

This unit is about installing set top box at customer's place and to address service complaints.

ELE/N8101

Set Top Box Installation and Service Technician

National Occupational Standard

Unit Code	ELE/N8101
Unit Title (Task)	Set Top Box Installation and Service Technician
Description	This unit is about installing set top box for either DTH or Digital Cable TV at client's site and to address service complaints and complete documentation (common for both types).
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> Collect the necessary components and the site details of customer Install the set top box (either DTH or Digital Cable TV) at customer site or servicing/fault resolution in case of complaint Coordinate with technical team for activation of service Collect essential documents/proof and getting relevant forms filled by customer Explain the working of set box to the customer and resolve their queries Fault identification and rectification, in the case of servicing
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Quality of output	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. Achieve the installation/servicing of all clients requests allotted to him</p> <p>PC2. Rectify customer complaint at first visit itself</p> <p>PC3. Ensure minimal repetitive complaints</p> <p>PC4. Ensure high Percentage of complaints resolved</p> <p>PC5. Minimize material consumed for resolving the complaint/fault</p> <p>PC6. Carry out the work as per standards specified/ laid out for the quality of work/output/</p> <p>PC7. Follow the requisite safety standards</p> <p>PC8. To check all parameters of STB like Transponder /Signal Strength/ Audio & Video quality & function of Remote</p>
Collect necessary details	<p>To be competent, the user/ individual must be able to:</p> <p>PC9. Understand the work order and site details of the customer from the concerned department</p> <p>PC10. Coordinate with stores department to collect the set box and other components/tools required for installation/servicing like drilling machine, satellite meter or QAM meter, multimeter etc.</p>
Install DTH STB	<p>To be competent, the user/ individual must be able to:</p> <p>PC11. Identify the location for installing the Dish Antenna (LNB) as per the specific requirements</p> <p>PC12. Drill and fix Dish Antenna (LNB)</p> <p>PC13. Align it correctly using the satellite meter</p> <p>PC14. Install set top box and check signal strength</p> <p>PC15. Connect set top box with TV</p> <p>PC16. Connect Home Theatre System with TV/ STB via HDMI, Audio/ Video/ Svideo/</p>

ELE/N8101

Set Top Box Installation and Service Technician

	SPDIF etc.
Install Digital Cable TV STB	<p>To be competent, the user/ individual must be able to:</p> <p>PC17. Familiarisation of Cable TV practice and Current analogue terms with Digital Cable TV Terms</p> <p>PC18. Install set top box and check RF signal strength for non-digital through cable</p> <p>PC19. Check Digital Signal Strength and quality (MER, BER & Power) for digital</p> <p>PC20. Check distribution circuit path from distribution point to end customer and rectify loose connections</p> <p>PC21. Align distribution amplifier</p> <p>PC22. Connect set top box with TV</p> <p>PC23. Connect Home Theatre System with TV/ STB via HDMI, Audio/ Video/ Svideo/ SPDIF etc.</p>
Servicing	<p>To be competent, the user/ individual must be able to:</p> <p>PC24. Identify the fault responsible for unsatisfactory/interrupted service by checking wire, signal strength, connectors, set top box using diagnostic screen of STB</p> <p>PC25. Identify the fault (In Case of Dead) Check the AC Mains output with the help of multi-meter/ Check the external power supply(Adaptor DC Output)</p> <p>PC26. Rectify the problem and resume uninterrupted service to the satisfaction of client</p> <p>PC27. Fill in the technical report of the fault found in the defective set top box and send to the L2 service centre where it will be repaired</p>
Documentation	<p>To be competent, the user/ individual must be able to:</p> <p>PC28. Maintain proper opening and closing documents for collection of material/testing devices from the necessary departments</p> <p>PC29. Collect necessary forms like Customer Registration and Program Authentication Form and submit to relevant departments in the company</p> <p>PC30. Collect ID proof/ Customer feedback form</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. Company's Quality policies/ vision on: Customer Handling, TAT (Turnaround Time), Commitment</p> <p>KA2. Organization structure and process of other departments of importance</p> <p>KA3. Importance of the individual's role in the organization</p> <p>KA4. Reporting structure</p> <p>KA5. Profile of customers</p> <p>KA6. Complete process of installation, activation as per company's business model</p> <p>KA7. Complete process of trouble shooting, repair as per company's business model</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. Knowledge about:</p> <ul style="list-style-type: none"> Basic knowledge of Geo stationery satellite/ Other Communication Satellite (only for DTH) Azimuth/ elevation/ polarisation (Only for DTH) Basic Knowledge of all Functions in STB/ Remote Spectrum Utilisation (only for DTH)

ELE/N8101

Set Top Box Installation and Service Technician

- Knowledge of Coaxial RF Network on 75 ohms (Only for Digital Cable TV)
- Knowledge of optimum signal Strength/ Signal quality for good quality Reception
- Basic knowledge of I/O functions
- Block diagram of set top box

KB2. Structure of cable and its parameters and their implications on signal

KB3. Knowledge of tuners

KB4. Knowledge of Low Noise Block Down Convertor (LNBC) (Only for DTH)

KB5. Knowledge about how to operate following tools:

- Satellite Meter (Only for DTH)
- Drilling Machine (Only for DTH)
- Angle finder (Only for DTH)
- RF Strength Meter (Only for Digital cable TV)
- QAM Meter (Only for Digital cable TV)
- Multi-meter
- Hand tools like Tester, Spanner, Cutter

KB6. Knowledge of Basics of digital signals and difference in analog and digital transmission of TV signals and functioning of television sets and specifications of different kind of inputs that can be given to a television set ie RF, AV, RGB, Component, VGA, USB and HDMI etc.

KB7. Knowledge of digital signal processing chain including CAS and SMS

KB8. Knowledge of basics of Digital TV signal distribution through HFC network including elements of fibre, coaxial chain and devices like nodes, amplifier, taps, Splitter etc. from head ends to input point of consumer premises (only for Digital Cable TV)

KB9. Knowledge of frequently occurring faults, causes and solutions

KB10. Knowledge of Safety standards and practices to be followed while using power connection, stair to climb, first aid etc.

KB11. Knowledge of Quality of Service (QoS) & End of Line (EOL) parameters and optimum range as specified by IS13420 Para -1

KB12. Knowledge of parameters for digital signals viz. MER, BER, C/N, CTV and CSO and proper recording of these for future reference

KB13. Knowledge of output ports of all types of STBs and input/ output ports of all types of TVs like LCD/ LED etc., Projectors, PCs etc.

KB14. Knowledge of connectivity of STB via additional device/ PC

KB15. Knowledge of safety precautions to be followed while using STB, TV etc. by customer

ELE/N8101

Set Top Box Installation and Service Technician

Skills (S)	
A. Core Skills/ Generic Skills	Basic reading and writing skills
	SA1. Basic reading and writing skills to maintain documents
	Teamwork and some multitasking
	SA2. To share work load as required SA3. To co ordinate with other departments
B. Professional Skills	Soft Skills
	SB1. To interact with the customers
	Using tools and machines
	SB2. To use hand tools such as lead tester, spanner, cutter etc
	SB3. To operate machines/meters like drilling machine, satellite meter, RF strength meter, Multimeter, QAM meter etc.
	SB4. Good & safe engineering practices
	Critical thinking
	SB5. To spot faults and rectify it using minimal resources

ELE/N8101

Set Top Box Installation and Service Technician

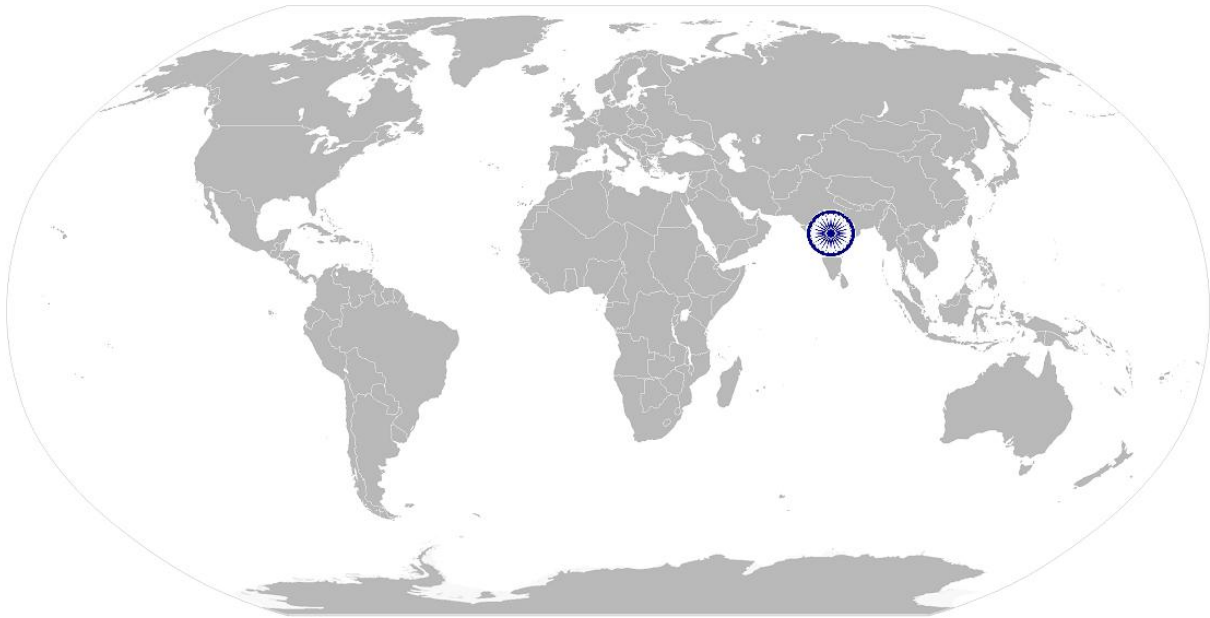
NOS Version Control

NOS Code		ELE/N8101	
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]		Version number	1.0
Industry	Electronics	Drafted on	19/07/2013
Industry Sub-sector	Assembly	Last reviewed on	08/08/2013
		Next review date	08/02/2014

ELE/N0001

Co ordinate with others

National Occupational Standard



Overview

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

ELE/N0001

Co ordinate with others

National Occupational Standard

Unit Code	ELE/N0001
Unit Title (Task)	Coordinate with others
Description	This OS unit is about communicating with colleagues and seniors in order to maintain smooth work flow
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> Interacting with supervisor to understand the requirements and work accordingly Coordinating with colleagues within and outside the department to carry out the work Receiving feedback on the work done Communicating any potential hazards or expected process disruption
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interaction with supervisor	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. Understand the work output requirements</p> <p>PC2. Comply with company policy and rules</p> <p>PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays</p> <p>PC4. Report about product defects, repairs and maintenance of machine required</p>
Interactions with colleagues and other departments	<p>PC5. Put team over individual goals</p> <p>PC6. Carry out conflicts resolution and multi-tasking</p>
Receive feedback	<p>PC7. Complete rework on time</p> <p>PC8. Apply the feedback received and avoid the mistakes in future</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. Company's policies on: incentives, delivery standards, and personnel management</p> <p>KA2. Work flow involved in company's assembly process</p> <p>KA3. Importance of the individual's role in the workflow</p> <p>KA4. Reporting structure</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. How to communicate effectively</p> <p>KB2. How to build team coordination</p>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	<p>Teamwork and some multitasking</p> <p>The individual on the job needs to know and understand how:</p>

ELE/N0001

Co ordinate with others

	SA1. To deliver product to next work process on time
B. Professional Skills	Decision making
	The individual on the job needs to know and understand: 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
	Reflective thinking
	The individual on the job needs to know and understand: SB3. How to improve work process
	Critical thinking
	The individual on the job needs to know and understand: SB4. How to spot process disruptions and delays

ELE/N0001

Co ordinate with others

NOS Version Control

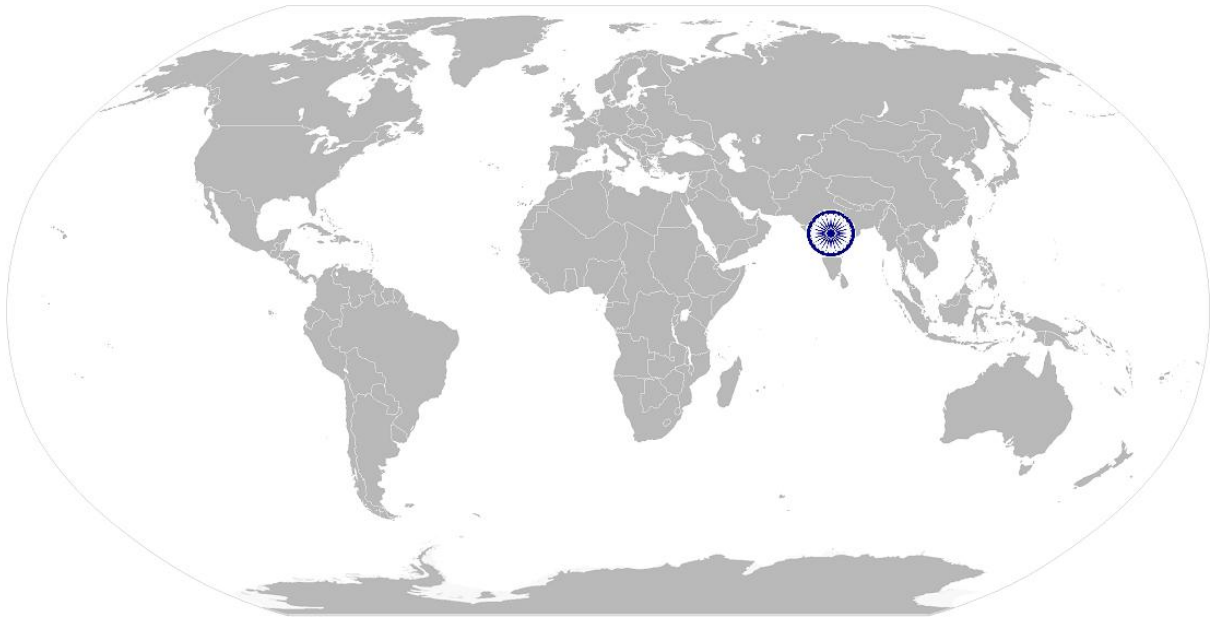
NOS Code		ELE /N0001	
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]		Version number	1.0
Industry	Electronics	Drafted on	19/07/2013
Industry Sub-sector	Assembly	Last reviewed on	08/08/2013
		Next review date	08/02/2014

[Back to QP](#)

ELE/N0002

Engaging with customers

National Occupational Standard



Overview

This unit is about interacting, understanding the requirement and engaging with customers.

Engaging with customers

National Occupational Standard

Unit Code	ELE/N0002
Unit Title (Task)	Engaging with customers
Description	This OS unit is about interacting, understanding the requirement and engaging with customers
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> Engage with the customer Understand the requirements of customers Suggest the customers for possible solutions
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Understanding the customer's requirement	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. Ask both open and close questions to identify problem faced</p> <p>PC2. Understand the customers requirement and suggest solution</p> <p>PC3. Receive Customer feedback</p>
Engage with the customers	<p>PC4. Follow behavioural etiquettes while interacting with customers</p> <p>PC5. Ensure Customer satisfaction and receive feedback</p>
Suggest solution	<p>PC6. Summarise the problem in the appliance to the customer and suggesting the possible solutions</p> <p>PC7. Explain the customers on time taken, methodology and possible cost for the service</p> <p>PC8. Take the customer approval on service</p>
Knowledge and Understanding (K)	
B. Organizational Context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs understand:</p> <p>KA1. Company's policies on: personnel management</p> <p>KA2. Importance of the individual's role in the workflow</p> <p>KA3. Reporting structure</p> <p>KA4. Company's code of conduct</p> <p>KA5. Organisation culture</p> <p>KA6. Complete process of installation, activation as per company's business model</p> <p>KA7. Complete process of trouble shooting, repair as per company's business model</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. Knowledge on electronics and Cable television DTH TV technology</p> <p>KB2. Communication skills</p> <p>KB3. Knowledge to understand customers' requirement and provide possible solutions</p> <p>KB4. Behavioural etiquettes</p>
Skills (S)	
C. Core Skills/	Reading and Writing skills

Engaging with customers

Generic Skills	SA1. To be able to read notes, instructions and other text material on product labels, components etc.
	SA2. To be able write notes on the problem, the repair made and other appropriate notes and hand over to customers
	Document Use
	SA3. To comprehend signs, labels, warnings SA4. To be able to complete forms such as work orders, invoices, maintenance records etc.
D. Professional Skills	Customer centricity
	SB1. To be able to develop a rapport with customers to understand their requirement
	Soft Skills
	SB2. To interact with customer to understand the problem faced in case of service SB3. Communication skills to interact with diverse customers
	Behavioural Skills
	SB4. Personal grooming SB5. behavioural etiquette such as maintaining the appropriate physical distance with customer during conversation SB6. being courteous at all times and with all types of customers

NOS Version Control

NOS Code	ELE/N0002		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]		Version number	1.0
Industry	Electronics	Drafted on	19/07/2013
Industry Sub-sector	Electronic goods servicing	Last reviewed on	08/08/2013
		Next review date	08/02/2014

[Back to QP](#)

Definitions

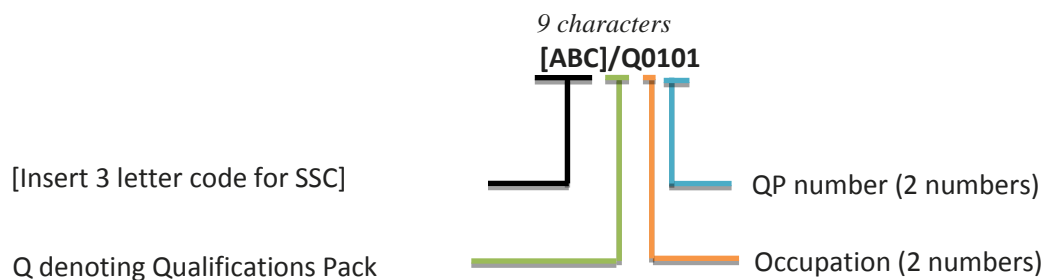
Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further 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.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-function	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
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 they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (OS)	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	Knowledge and understanding 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	Core skills or generic skills 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.
Keywords /Terms	Description
NOS	National Occupational Standard(s)
NVQF	National Vocational Qualifications Framework
NSQF	National Qualifications Framework
NVEQF	National Vocational Education Qualifications Framework
QP	Qualifications Pack

Annexure

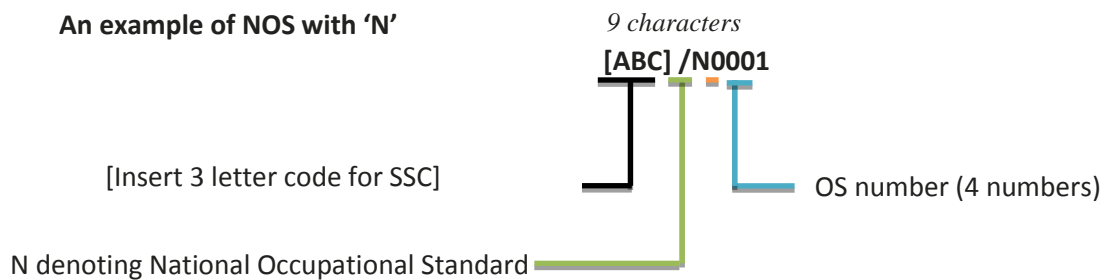
Nomenclature for QP and NOS

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
[Insert Name of Sub-sector1, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector2, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector3, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector4, Font: Calibri (Body), size 11, Bold]	[Insert range]
...	...

Sequence	Description	Example
Three letters	Industry name	ELE
Slash	/	/
Next letter	Whether QP or NOS	Q
Next two numbers	Occupation code	01
Next two numbers	OS number	02