

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR INSTRUMENTATION AUTOMATION SURVEILLANCE & COMMUNICATION 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- Installation and Commissioning Technician (FM Radio Station)

SECTOR: INSTRUMENTATION AUTOMATION SURVEILLANCE & COMMUNICATION

SUB-SECTOR: Broadcast Communication

OCCUPATION: Installation & Commissioning

REFERENCE ID: IAS/Q0202

ALIGNED TO: NCO-2015/ NIL

Brief Job Description: Installation & Commissioning Technician (FM Radio Station) carries out Installation of sub systems of FM Radio Broadcasting Transmitters and Studios and assists the Installation & Commissioning Engineer in Testing and Commissioning.

Personal Attributes: This job requires discipline and attention to details, interdisciplinary aptitude and ability to learn. The person should be willing to work for long hours to meet deadlines and be able to cope with pressure.



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Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

Job Details	Qualifications Pack Code	IAS/Q0202		
	Job Role	Installation & Commissioning Technician (FM Radio Station)		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Instrumentation, Automation, Surveillance, Communication	Drafted on	05/09/2017
	Sub-sector	Automation	Last reviewed on	05/09/2017
	Occupation	Installation & Commissioning	Next review date	05/09/2019

Job Role	Installation & Commissioning Technician (FM Radio Station)
Role Description	Installation & Commissioning Technician (FM Radio Station) carries out Installation of sub systems of FM Radio Broadcasting Transmitters and Studios and assists the Engineer in Testing and Commissioning.
NSQF level	4
Minimum Educational Qualifications*	ITI Electronics or equivalent
Maximum Educational Qualifications*	Not Applicable
Training (Suggested but not mandatory)	Practical Training in on radio station installation best practices at any radio station or properly equipped training center
Minimum Job Entry Age	19 years
Experience	At least two-year hands-on experience in FM radio station installation, maintenance or technical operation.
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> 1. IAS/N0205 Installation of FM Radio Broadcasting Station 2. IAS/N0206 Assist in Testing of FM Radio Broadcasting Station 3. IAS/N2105 Work Effectively With Teams 4. IAS/N2003 Health and Safety at Workplace
Performance Criteria	As described in the relevant OS units

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

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 fulfill 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 organization.
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 organizational specific knowledge that an individual needs in order to perform to the required standard
Organizational Context	Organizational context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

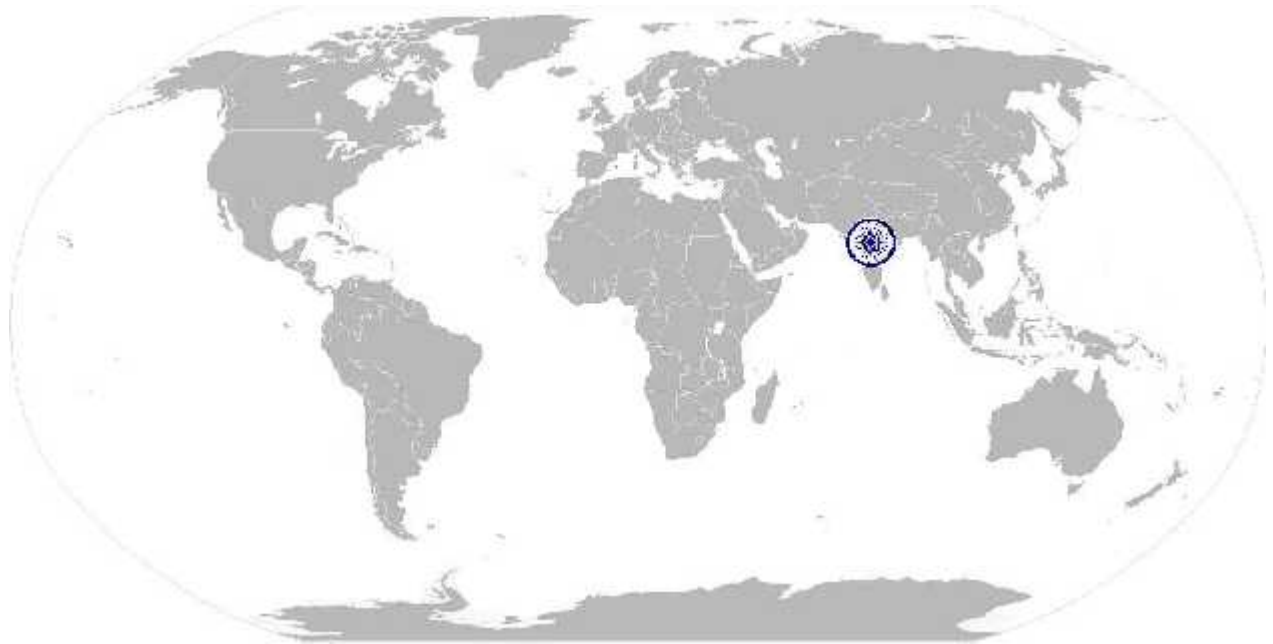
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills.	Core skills or generic skills are a group of skills that are the key to learning and working in today's world. These skills are typically needed in 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.

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

Acronyms	Keywords /Terms	Description
	FM	Frequency Modulation
BOQ	Bill of Quantities	
CCTV	Closed Circuit Television	
ESD	Electro Static Discharge	
RF	Radio Frequency	
ESCOM	Electricity Supply Company	
HVAC	Heating, Ventilation and Air Conditioning	
I&C	Installation & Commissioning	
GI	Galvanized iron	
XLR	Standard professional audio connector	
SPL	Sound pressure level	
RT60	A term used for defining the Reverberation time of a space	
STI	Speech Transmission Index	
THD	Total Harmonic Distortion	
SNR	Signal to Noise Ratio	
STL	Studio-transmitter-link	
ATP	Acceptance Test Protocol	
HT/LT	High Tension / Low Tension AC Power Supply	

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National Occupational Standard



Overview

This OS Unit about installation of various sub systems of FM Transmitter and Studio installation, according to the design, BOQ and the material provided.

IAS/N0205

Installation of FM Radio Broadcasting Station

National Occupational Standard	Unit Code	IAS/N0205
	Unit Title (Task)	Installation of FM Radio Broadcasting Station
	Description	This OS Unit about installation of various sub systems of FM Transmitter and Studio installation, according to the design, BoQ and the material provided.
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Read and understand the installation documents, drawings, schematics etc. of the entire project. • Lay cable trays, raceways and conduits • Lay cables • Fix Connectors and Terminate cables • Install Equipment and Software at Studio center • Install Equipment and Software at Transmission center • Install RF rigid lines and transmission lines • Install electric power supply
Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria	
Read and Understand the Installation Documents	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC1. Study and understand the workflow of the entire broadcast chain and facility.</p> <p>PC2. Study and understand the floor plan of the Studio center site.</p> <p>PC3. Study, understand the placement of equipment and systems in the Studio center site.</p> <p>PC4. Study and understand the placement of power supply equipment of Studio Center.</p> <p>PC5. Study and understand the placement of ventilation and air conditioning equipment at the Studio center.</p> <p>PC6. Study and understand the placement of server rack/room, Cable harness etc at the Studio Center.</p> <p>PC7. Study and understand the floor plan of the transmitter station site.</p> <p>PC8. Study and understand the placement of power supply equipment of Transmitter Center.</p> <p>PC9. Study, understand the placement of equipment and systems in Transmitting center.</p> <p>PC10. Study and understand the placement of ventilation and air conditioning equipment at the Transmitter center.</p> <p>PC11. Study and understand the placement of server rack/room, Cable harness etc. at the Transmitter Center.</p>	

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Installation of FM Radio Broadcasting Station

	<p>PC12. Study and understand the Technical and installation manual of all equipment being installed for the project.</p>
<p>Lay Cable Trays, Raceways and Conduits</p>	<p>The user/ individual on the job needs to know and understand how to:</p> <p>PC13. Mark the position of equipment and cable routing on the floor and wall in the Studio center.</p> <p>PC14. Mark the position of equipment and cable routing on the floor and wall in the Transmitter center.</p> <p>PC15. Install raceways, cable trays and conduiting work as per the drawing for electrical power wires/cables for the Studios center.</p> <p>PC16. Install raceways, cable trays and conduiting work as per the drawing for electrical power wires/cables for the Transmitting center.</p> <p>PC17. Install conduits as per the drawing for routing the audio and networking cables for both the centers.</p> <p>PC18. Install cable trays/raceways/wall support structure as per the drawing for laying the rigid lines, RF feeder cables etc. at the Transmitter center.</p>
<p>Lay Cables</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC19. Lay and terminate all the cables with appropriate sized lugs, ferrules etc in the Studio center as per the installation manual.</p> <p>PC20. Lay and terminate all the cables with appropriate sized lugs, ferrules etc in the Transmitting center as per the installation manual.</p>
<p>Fix Connectors and Terminate Cables</p>	<p>The user individual on the job needs to know and understand how to:</p> <p>PC21. Take up connectorisation of power supply cables as per the installation manual.</p> <p>PC22. Fix Connectors and Terminate Audio Cables as per the installation manual.</p> <p>PC23. Fix Connectors and Terminate Data Cables as per the installation manual.</p> <p>PC24. Fix Connectors and Terminate RF rigid lines/cables as per the installation manual.</p> <p>PC25. Lay and route audio cables for interconnecting the audio equipment as per the installation manual.</p> <p>PC26. Mark all audio cables using standard notation and legends as per the installation manual.</p> <p>PC27. Check and reconfirm the polarity of audio connectors are as per the standard notation.</p> <p>PC28. Seal the both ends of the conduits.</p>

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Installation of FM Radio Broadcasting Station

<p>Install Equipment and Software at Studio Center</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC29. Take up LT power supply works like installation of LT distribution kiosk, cabling and earthing.</p> <p>PC30. Provide UPS backed up power to each of the equipment based on the OEM's recommendation.</p> <p>PC31. Take up the wiring and installation of all the audio equipment, computers etc. as per the installation manual.</p> <p>PC32. Check and ensure that, the earth wires are securely connected to each of the equipment.</p> <p>PC33. Install Studio automation software for recording, postproduction, playlist creation, playback and archiving functions.</p> <p>PC34. Take up the networking and installation of all the computers and network-enabled devices like Mixers, Telephone hybrid etc.</p> <p>PC35. Install studio transmitter link equipment.</p>
<p>Install Equipment and Software at Transmission Center</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC36. Take up LT power supply works like installation of LT distribution kiosk, cabling and earthing.</p> <p>PC37. Provide UPS backed up power to each of the equipment based on the OEM's recommendation.</p> <p>PC38. Mark the position of transmitter, coaxial switch, RF rigid line feeders, UPS, LT switchgear etc.. on the floor as per the Installation manual.</p> <p>PC39. Install RF rigid line from transmitter/RF change over output to the outdoor coaxial feeder cable through wall feed through insulator.</p> <p>PC40. Install cable Dehydrator and the associated plumbing for the outdoor coaxial feeder cable.</p> <p>PC41. Install Codec for the STL link</p> <p>PC42. Install Broadcast processor.</p> <p>PC43. Install FM transmitter along with, standby transmitter (if provided).</p> <p>PC44. Install the RF change over switch and dummy load.</p> <p>PC45. Install FM Demodulator, remote monitoring and monitoring equipment as per the installation manual.</p> <p>PC46. Check and ensure that, the earth strips are securely connected to high power equipment viz UPS and FM transmitter.</p>

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Installation of FM Radio Broadcasting Station

<p>Install RF Rigid Lines and Transmission Lines</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC47. Lay the indoor RF rigid lines and transmission lines in Transmitter centre for interconnecting transmitter, combiner, feeder cable as per the installation manual</p>
<p>Install Electric Power Supply</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC48. Electrical installation for interconnecting ESCOM incoming supply, captive power source, main distribution board, UPS, switch boards for lighting, equipment and general purpose power points.</p> <p>PC49. Captive power source like DG or Solar panel as per the OEM's recommendations after providing suitable foundation, exhaust arrangement etc. in a well-ventilated location and away from the FM station so that, the noise and exhaust does not get into the station.</p> <p>PC50. Installation of UPS system and power distribution per recommended procedures and drawings.</p> <p>PC51. Laying of Electric wires in conduits for the luminaries over the false ceiling.</p> <p>PC52. Ensuring marking of all cables as per the drawing for ease of identification.</p> <p>PC53. Sealing of conduits with glass wool buds to prevent sound leakage and ingress of insects.</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. Company hierarchy and reporting structure</p> <p>KA2. Company code of conduct</p> <p>KA3. company culture</p> <p>KA4. Company documentation policy</p> <p>KA5. Quality and standards systems followed in the company</p> <p>KA6. Company business, locations, products, services and clients</p> <p>KA7. Company website, contacts</p> <p>KA8. Partners, their products and services</p> <p>KA9. Company sales and after sales policies</p>

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Installation of FM Radio Broadcasting Station

<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The purpose of the project, the workflow and procedure involved in the installation.</p> <p>KB2. The layout of the station and the location of various facilities.</p> <p>KB3. site conditions and how these impact the installation works and later its operation and maintenance.</p> <p>KB4. The organization and reporting structure</p> <p>KB5. Rules and regulations to be followed under normal and emergency conditions</p> <p>KB6. working hours, shifts, off days and leave entitlements</p> <p>KB7. The job description and responsibility, if any.</p> <p>KB8. Type of equipment and installation material used in the station and how these impact the site conditions</p> <p>KB9. Safety precaution in handling of the electrical equipment and providing first aid in the event of accidental electrocution.</p> <p>KB10. Safety precaution in handling of the high power RF equipment.</p> <p>KB11. Training on the administration of first aid.</p> <p>KB12. Type of hand tools, accessories and their locations that falls under the individual's domain of work.</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Compose e-mails, letters and other official documents</p> <p>SA2. Write schedules and timelines</p> <p>SA3. Use Formats and check list for Site Readiness planning and reports</p> <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA4. Company policy related to site safety precaution and readiness</p> <p>SA5. Formats for site Readiness check sheets, list</p> <p>SA6. Instructions from Installation Engineer</p> <p>SA7. Read technical specifications, drawings, manuals, instructions</p> <p>SA8. Read standards and regulatory compliance documents</p> <p>SA9. Read schedules and timelines</p>
<p>Oral Communication (Listening and Speaking skills)</p>	

IAS/N0205

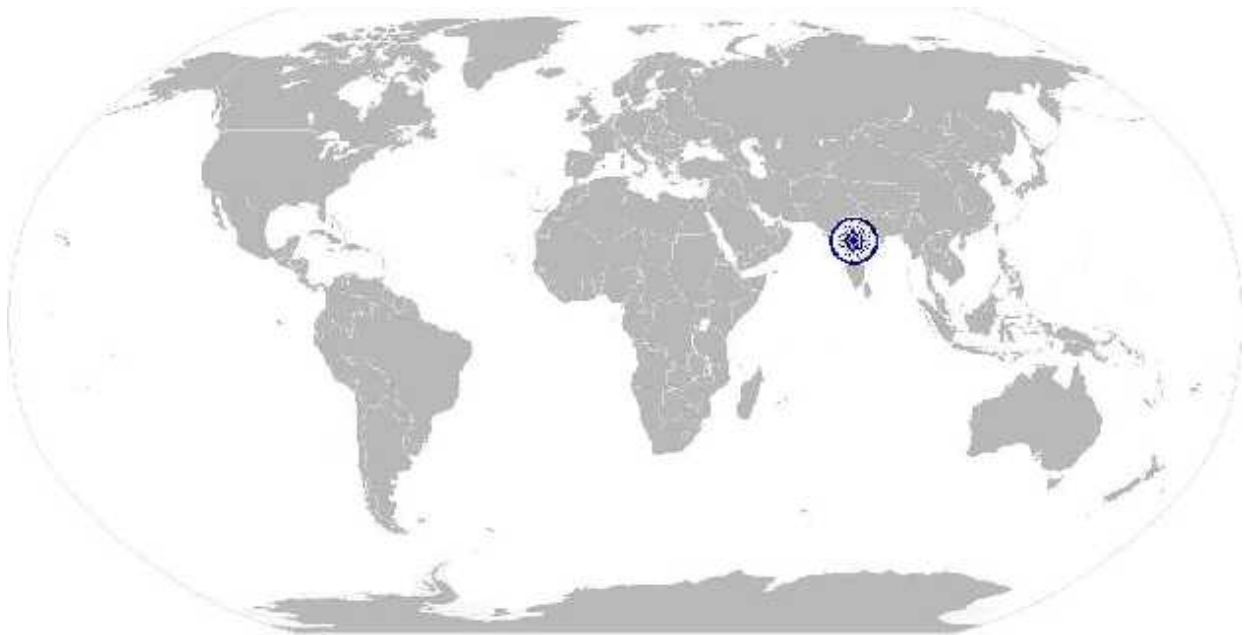
Installation of FM Radio Broadcasting Station

	<p>The user/ individual on the job needs to know and understand:</p> <p>SA10. Discuss schedules and work items with co-workers</p> <p>SA11. Keep customer, vendors and partners informed about progress</p> <p>SA12. Report issues and problems in clear terms to the Supervisor / Engineer</p> <p>SA13. Report progress to Supervisor/ Engineer</p>
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB1. Take decisions pertaining to the installation</p> <p>SB2. Take pragmatic decisions to keep the project on track when issues arise with the work done by partners or vendors, without compromising the quality</p>
	<p>Plan and Organize</p>
	<p>The individual on the job needs to know and understand:</p> <p>SB3. Execute the plan for the installation and detail its activities so that it can be finished on time.</p> <p>SB4. Help the I&C Engineer in preparing the installation plan.</p>
	<p>Customer Centricity</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB5. Understand the needs of the customer and suggest most appropriate solution</p> <p>SB6. Support customers when they need help</p>
	<p>Problem Solving</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)</p> <p>SB8. Identify immediate or temporary solutions to resolve delays</p>
<p>Analytical Thinking</p>	
<p>The individual on the job needs to know and understand how to:</p> <p>SB9. Use the existing information to arrive at actionable decision points</p> <p>SB10. Use the existing information for improving the customer satisfaction</p> <p>SB11. Use the existing information to optimize solution and company business</p> <p>SB12. Analyze problems and identify causes and possible solutions</p>	
<p>Critical Thinking</p>	

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Installation of FM Radio Broadcasting Station

	<p>The individual on the job needs to know and understand how to:</p> <p>SB13. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action</p> <p>SB14. Analyze the way in which the existing facility layout is in operation and think of more economic and feasible measures for existing layout modification.</p>
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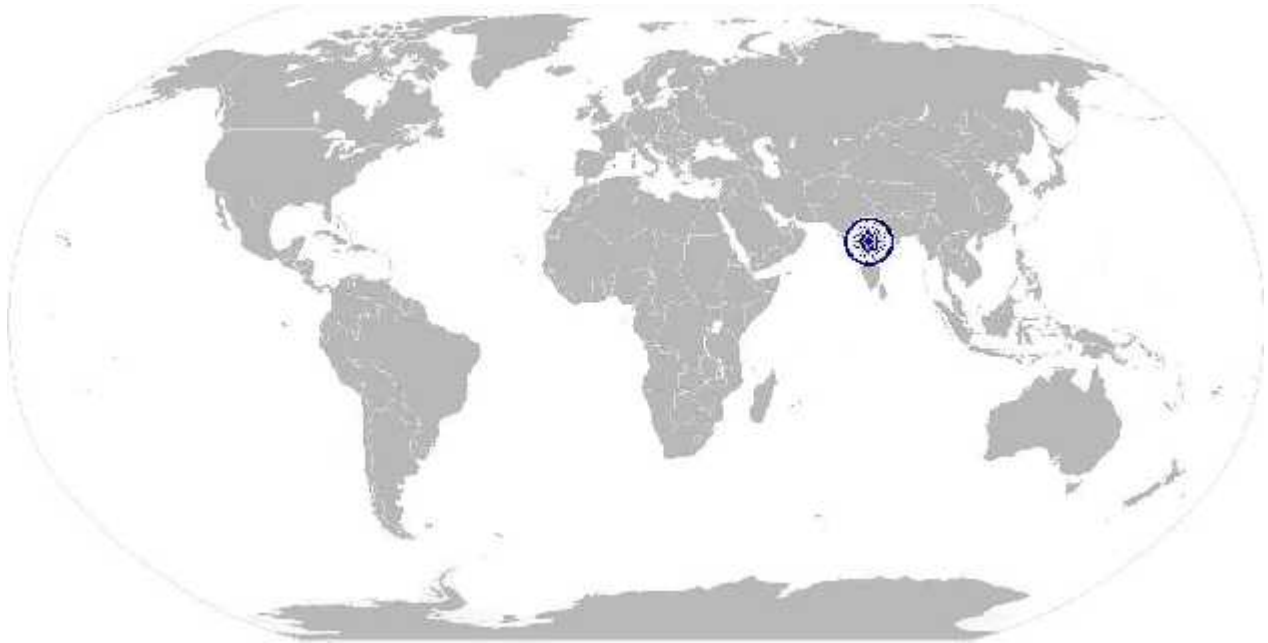


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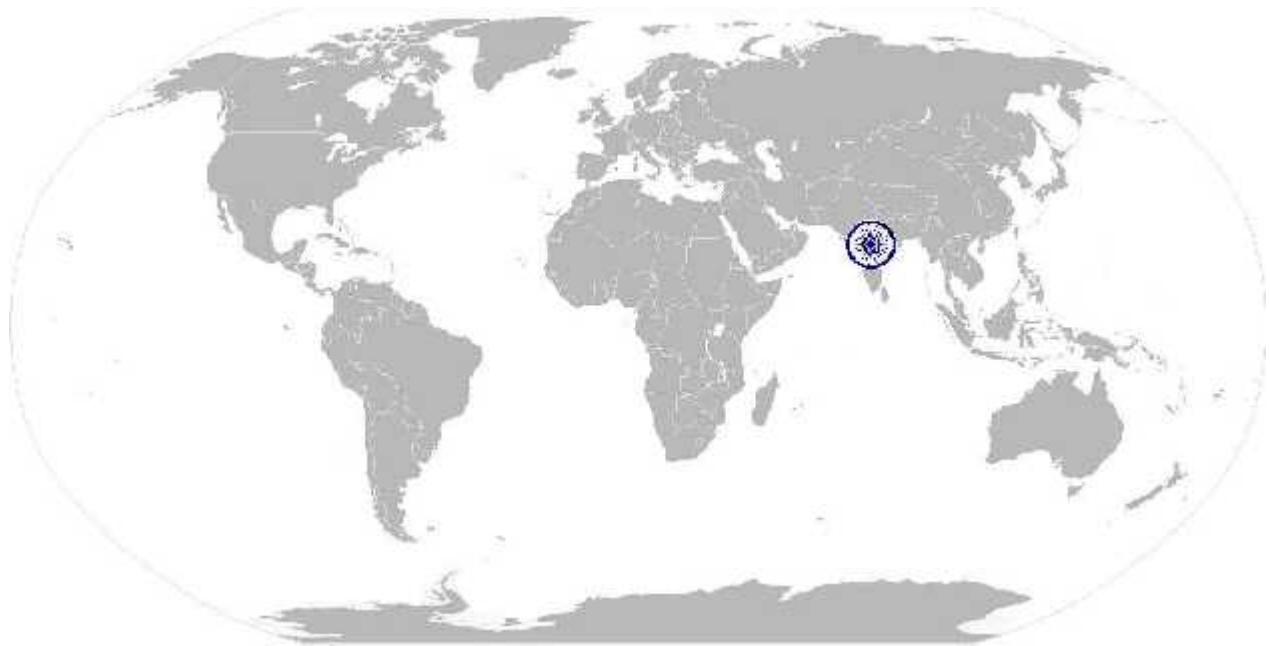
NOS Version Control

NOS Code	IAS/N0205		
Credits (NSQF)	TBD	Version number	1.0
Industry	Instrumentation Automation Surveillance and Communication	Drafted on	31/07/2017
Industry Sub-sector	Broadcast Communication	Last reviewed on	05/09/2017
Occupation	Installation & Commissioning	Next review date	05/09/20179



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National Occupational Standard



Overview

This OS unit is about providing testing support to I&C Engineer for subsystems of FM Radio Transmitter and Studios.

IAS/N0206

Support Testing of FM Radio Broadcasting Station

National Occupational Standard

Unit Code	IAS/N0206
Unit Title (Task)	Support Testing of FM Radio Broadcasting Station
Description	This OS unit is about supporting the I&C Engineer in testing all subsystems of FM Radio Transmitter and Studios and the integrated system for proper operation and performance.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Preparing the setup for the testing • Check and confirm Electric power supply arrangement • Check and confirm the working of Air conditioning and ventilation • Check and confirm the working of Audio/ IT equipment • Check and confirm the working of RF equipment • Prepare for commissioning • Prepare for Hands-On Training
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Preparation for Testing	The user/ individual on the job needs to know and understand how to: <p>PC1. Check and understand the documentation on testing procedure of the entire setup provided by the respective OEM and consultant and understand the operating conditions and functioning of each of the equipment. In case of any clarification or details are required, get it from them before taking up the testing.</p> <p>PC2. Adhere to the recommended operating condition of each of the equipment and not to exceed them at any cost.</p>
Check and confirm Electric power supply arrangement	The user/ individual on the job needs to know and understand how to: <p>PC3. Check all electric, audio, RF and Data connectivity by physical inspection.</p> <p>PC4. Check and ensure that, polarity for the Hot (positive/Red), Cold (negative/Black) and Ground (green) points for audio are connected as per the standard practice. Similarly, test power supply Line, Neutral and Earth are connected as per the standard practice.</p> <p>PC5. Check and log the power supply voltage and current drawn by all the major equipment using multimeter and clip-on ammeter.</p> <p>PC6. Check and log the AC voltage between Neutral and Earth of incoming supply, distribution board and every point socket. If the AC voltage is more than 1 V, check the earth connectivity.</p> <p>PC7. Check for balancing of electric power loads on all the three phases and try to balance the power to the extent possible by distributing the load, if required.</p>
Check and confirm the working of Air conditioning and	The user/ individual on the job needs to know and understand how to: <p>PC8. Measure and log the air flow, outdoor and indoor temperatures and relative</p>

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Support Testing of FM Radio Broadcasting Station

ventilation	humidity to ascertain optimum working of air conditioning plants.
Check and confirm the working of Audio/ IT equipment	<p>The user/ individual on the job needs to be know and understand how to:</p> <p>PC9. Assist Radio Broadcast Engineer in checking the proper functioning of each of the equipment, measure and log the performance of each of the audio/RF equipment as per the recommended procedure suggested by the OEM.</p> <p>PC10. Assist Radio Broadcast Engineer in measuring all important parameters of sound recording studio viz Ambient sound pressure level using SPL meter, RT60 measurement and STI. Audio performance measurements include THD, SNR, response, insertion loss etc of the entire chain from microphone to STL equipment input.</p>
Check and confirm the working of RF equipment	<p>The user/individual on the job needs to know and understand how to:</p> <p>PC11. Assist Radio Broadcast Engineer in checking and carry out RF measurements that includes measurement of Return loss of the combined feeder cable/antenna during cold condition and forward/reflected power during the operating condition of the transmitter and Transfer Switch. In case of deviation, seek advice from the consultant and troubleshoot the problem.</p> <p>PC12. Check and log important parameters displayed by the Transmitter's front panel for reference. Check the User Manual of the equipment for normal readings.</p>
Prepare for commissioning	<p>The user/ individual on the job needs to know and understand how to:</p> <p>PC13. Make visual check for normal performance of the entire system.</p> <p>PC14. Arrange for listening tests of the chain and final broadcast</p>
Prepare for Hands-On Training	<p>The user/ individual on the job needs to know and understand how to:</p> <p>PC15. Arrange facilities for on-hand training the station staff on the operation and maintenance of the setup</p>
Knowledge and Understanding (K)	
B. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Company hierarchy and reporting structure</p> <p>KA2. Company code of conduct</p> <p>KA3. Company culture</p> <p>KA4. Company documentation policy</p> <p>KA5. Quality and standards systems followed in the company</p> <p>KA6. Company business, locations, products, services and clients</p> <p>KA7. Company website, contacts</p> <p>KA8. Partners, their products and services</p> <p>KA9. Company sales and after sales policies</p>

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Support Testing of FM Radio Broadcasting Station

<p>B. Technical Knowledge</p>	<p>The user/ individual on the job needs to know and understand:</p> <p>KB1. Basic knowledge on Electrical, electronics and electrical communication equipment.</p> <p>KB2. Basics of computers and human machine interface (HMI)</p> <p>KB3. Basics of normal electrical safety precautions, special safety procedure and precaution to be followed for working on RF equipment and high rise transmission towers</p> <p>KB4. Quality, standards and guidelines to be followed during the installation of high power broadcast communication equipment</p> <p>KB5. Basic knowledge on Radio broadcast transmission chain consisting of audio input equipment, transmitter, change over equipment, antenna, dummy load, monitoring chain etc.</p> <p>KB6. Specific knowledge on the installation of application software used for preparation of Playlist, post production, commercial logging etc.</p> <p>KB7. Knowledge of use of Test and measuring equipment like Audio Analyzer, RF Network Analyzer etc.</p> <p>KB8. Electrical panel and wiring knowledge</p> <p>KB9. Process and parameters involved in the testing of individual equipment and entire chain</p> <p>KB10. Relevant regulations, standards and codes of practice and their implications on the installation</p> <p>KB11. Acquaintance with the setup and operation of test and measurements used in the final testing and commissioning to help the Radio broadcast engineer.</p>
<p>Skills (S) [Optional]</p>	
<p>C. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Compose e-mails, letters and other official documents</p> <p>SA2. Fill test reports in prescribed format</p> <p>SA3. Write or Edit user training related material</p> <p>Reading Skills</p> <p>The individual on the job needs to know and understand how to:</p> <p>SA4. Read technical specifications, drawings, manuals, instructions</p> <p>SA5. Read standards and regulatory compliance documents</p> <p>SA6. Read schedules and timelines</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The individual on the job needs to know and understand how to:</p> <p>SA7. Discuss schedules and work items with co-workers</p> <p>SA8. Keep customer, vendors and partners informed about progress</p> <p>SA9. Discuss task lists, schedules, and work-loads with co-workers</p> <p>SA10. Interact with co-workers and gather all the information related to process</p>

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Support Testing of FM Radio Broadcasting Station

	requirement
D. Professional Skills	Decision Making
	The individual on the job needs to know and understand how to:
	SB1. Take decisions pertaining to the project installation, testing and commissioning
	SB2. Take pragmatic decisions to keep the project on track when issues arise with the work done by partners or vendors, without compromising the quality
	SB3. Make necessary adjustments to schedules and timelines, taking the team and management into confidence
	Plan and Organize
	The individual on the job needs to know and understand:
	SB4. Plan the execution of the project and its detailed activities so that it can be finished on time.
	SB5. Allocate and supervise work to the team members according to role and responsibilities
	Customer Centricity
The individual on the job needs to know and understand how to:	
SB6. Understand the needs of the customer and suggest most appropriate solution	
SB7. Support customers when they need help	
Problem Solving	
The individual on the job needs to know and understand how to:	
SB8. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)	
SB9. Identify immediate or temporary solutions to resolve delays	
Analytical Thinking	
The individual on the job needs to know and understand how to:	
SB10. Use the existing information to arrive at actionable decision points	
SB11. Use the existing information for improving the customer satisfaction	
SB12. Use the existing information to optimize solution and company business	
SB13. Analyze problems and identify causes and possible solutions	
Critical Thinking	
The individual on the job needs to know and understand how to:	
SB14. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action	
SB15. Analyze the way in which the existing facility layout is in operation and think of more economic and feasible measures for existing layout modification.	

IAS/N0206

Support Testing of FM Radio Broadcasting Station

NOS Version Control

NOS Code	IAS/N0206		
Credits (NSQF)	TBD	Version number	1.0
Industry	Instrumentation, Automation, Surveillance, Communication	Drafted on	05/09/2017
Industry Sub-sector	Broadcast Communication	Last reviewed on	05/09/2017
Occupation	Installation & Commissioning	Next review date	05/09/20179

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National Occupational Standard



Overview

This unit is about working effectively with colleagues, in own work group and in other work groups within the organization.

IAS/N2105

Work Effectively With Teams

National Occupational Standard

Unit Code	IAS/N2105
Unit Title (Task)	Work Effectively With Teams
Description	This NOS unit is about building relationships and working with people and groups inside and outside the organization, using skills and habits, to achieve the team goals and objectives.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Creating team environment • Communicating - giving and receiving • Working cooperatively • Participating in team decision making • Demonstrating Sense of Responsibility • Showing respect for opinions, customs and preferences
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Create Team Environment	<p>To be competent, the individual on the job must be able to:</p> <p>PC1. Know and understand the team objectives and goals</p> <p>PC2. Know team members by name. Greet them appropriately and respond to their greetings.</p> <p>PC3. Know the roles and responsibilities of team members. Ensure others know about you and your role in the team</p> <p>PC4. Learn about the culture and preferences of team members – especially if they belong to other organizations or nationalities</p> <p>PC5. Follow organization’s policies and procedures for working with team members within and outside the organization – especially relating to privacy, confidentiality and security.</p> <p>PC6. Create an environment of trust and mutual respect</p>
Communicate – Give and Receive	<p>To be competent, the individual on the job must be able to:</p> <p>PC7. Use appropriate mode of communication – verbal, written, mail, phone or text and clearly articulate your message to ensure that the recipient understands the message.</p> <p>PC8. Listen to team members and try to understand what they are wanting to say. Seek or provide clarifications if you see any gap in understanding</p> <p>PC9. Communicate professionally and follow organization protocols. Do not overload the team members with unnecessary and unsolicited information</p> <p>PC10. Share important information with the team timely.</p> <p>PC11. Respond to communications promptly.</p>

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<p>Work Cooperatively</p>	<p>To be competent, the individual on the job must be able to:</p> <p>PC12. Perform own role and produce output in time for other team members to consume</p> <p>PC13. Receive inputs from others and work upon it per role requirement</p> <p>PC14. Make adjustments within the permissible rules so that work flows smoothly.</p> <p>PC15. Help team members to perform their role effectively and provide any clarifications and support they need</p> <p>PC16. Share tools and common resources fairly, taking cognizance of others' needs and schedules</p> <p>PC17. Resolve any contentious issues amicably, involving the team lead or the supervisor if needed</p> <p>PC18. Let team members know in good time if you cannot carry out your commitments, explaining the reasons and alternate solutions, if any. Let the team lead know about this.</p>
<p>Participate in Team Decision making</p>	<p>To be competent, the individual on the job must be able to:</p> <p>PC19. Think positively and make constructive suggestions to meet the goals</p> <p>PC20. Accept and give suggestions with open mind</p> <p>PC21. Take initiatives and volunteer to contribute</p> <p>PC22. Help team members with facts and figures to arrive at workable decisions</p> <p>PC23. Accept decisions professionally and support these, even if these do not match your suggestions and personal views</p>
<p>Demonstrate Sense of Responsibility</p>	<p>To be competent, the individual on the job must be able to:</p> <p>PC24. Act in the interest of the team and the organization to ensure that things do not 'fall through the gap' and team goals are achieved.</p> <p>PC25. Take initiative to correct the situation if something seems to be going wrong.</p> <p>PC26. Seek help or escalate if the situation demands</p>
<p>Show Respect for Opinions, Customs and Preferences</p>	<p>To be competent, the individual on the job must be able to:</p> <p>PC27. Follow organization's and statutory guidelines about making references or comments to social customs or preferences</p> <p>PC28. Refrain from making any comments to hurt sentiments</p> <p>PC29. Accommodate team members' preferences to the extent feasible. If these come in the way of fulfilling team goals, discuss with the supervisor/ team leader.</p> <p>PC30. Seek information and clarifications from others if you do not understand any customs.</p>
<p>Knowledge and Understanding (K)</p>	

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Work Effectively With Teams

<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The organization’s policies and procedures for working with colleagues, roles and responsibilities in relation to this</p> <p>KA2. The importance of effective communication and establishing good working relationships with colleagues</p> <p>KA3. Different methods of communication and the circumstances in which it is appropriate to use these</p> <p>KA4. The importance of creating an environment of trust and mutual respect</p> <p>KA5. The implications of own work on the work and schedule of others</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Different types of information that colleagues might need and the importance of providing this information when it is required</p> <p>KB2. The importance of helping colleagues with problems, in order to meet quality and time standards as a team</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job need to know and understand how to:</p> <p>SA1. Complete written work with attention to detail</p>
	<p>Reading Skills</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA2. Read instructions, guidelines/procedures</p>
<p>B. Professional Skills</p>	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. Listen effectively and orally communicate information</p> <p>SA4. Ask for clarification and advice from the concerned person</p>
	<p>Decision Making</p>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments</p>	
<p>Plan and Organize</p>	
<p>The user/individual on the job needs to know and understand:</p> <p>SB2. Plan and organize work to achieve targets and deadlines</p>	

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Work Effectively With Teams

	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. Real needs of the customer and suggest most appropriate solution SB4. Support customer when they need help
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. Apply problem solving approaches in different situations
	Analytical Thinking
The user/individual on the job needs to know and understand how to: SB6. Use the existing information to arrive at actionable decision points SB7. Use the existing information for improving the customer satisfaction SB8. Use the existing information to optimize solution and company business SB9. Analyze problems and identify causes and possible solutions	
Critical Thinking	
The user/individual on the job needs to know and understand how to: SB10. Apply balanced judgments to different situations	

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Work Effectively With Teams

NOS Version Control

NOS Code	IAS/N2105		
Credits (NSQF)	TBD	Version number	1.0
Industry	Instrumentation Automation Surveillance and Communication	Drafted on	05/09/2017
Industry Sub-sector	Broadcast Communication	Last reviewed on	05/09/2017
Occupation	Installation & Commissioning	Next review date	05/09/20179



National Occupational Standard



Overview

This unit is about maintaining a safe, healthy and secure working environment.

IAS/N2003

Health and Safety at Workplace

National Occupational Standard

Unit Code	IAS/N2003
Unit Title (Task)	Health and Safety in Workplace
Description	This OS unit is about following adequate safety procedures to make work environment safe
Scope	This unit/ task covers the following: <ul style="list-style-type: none"> Follow standard safety procedures of the company Maintain good health and posture
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Follow standard safety procedures of the company	To be competent, the user/ individual on the job must be able to: <ul style="list-style-type: none"> PC1. Comply with general safety procedures followed in the company PC2. Follow standard safety procedures while handling an equipment, hazardous material or tool PC3. Remove finger rings or any other metal objects which may interfere with the work before working on the unit PC4. Use safety materials such as goggles, gloves, earplugs, caps, ESD pins, covers, shoes, etc. PC5. Escalate about any hazardous materials or things found in the premises PC6. Report about any breach of safety procedure in the company PC7. Ensure zero accidents at work PC8. Avoid damage of components due to negligence in ESD procedures PC9. Participate regularly in fire drills or other safety related workshops organized by the company PC10. Ensure no loss for company due to safety negligence
Maintain good health and posture	To be competent, the user/ individual must be able to: <ul style="list-style-type: none"> PC11. Maintain appropriate posture, especially in long hours of sitting or standing position and in handling heavy materials PC12. Participate in company organized health sessions such as yoga, physiotherapy or games PC13. Handle heavy and hazardous materials with care and using appropriate tools and handling equipment such as trolleys, jacks and ladders
Knowledge and Understanding (K)	

IAS/N2003

Health and Safety at Workplace

<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<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. Company occupational safety and health policy followed</p> <p>KA3. Company emergency evacuation procedure</p> <p>KA4. Company's medical policy</p>
<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. How to maintain the work area safe and secure</p> <p>KB2. How to handle hazardous materials, tools and equipment</p> <p>KB3. Emergency procedures to be followed such as fire accidents, electrocution etc.</p> <p>KB4. Long term value of good posture and use of appropriate handling equipment</p> <p>KB5. Safety regulations and standards and how to apply these</p> <p>KB6. Electrical grounding practices</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills (Knowledge of the company / organization and its processes)</p>	<p>Writing Skills</p> <p>The individual on the job needs to know and understand:</p> <p>SA1. Compose e mails, letters, memos, reminders, and other documents clearly</p> <p>SA2. Share knowledge, issues, problems and resolutions relating to safety</p> <p>Reading Skills</p> <p>The individual on the job needs to know and understand:</p> <p>SA3. Read mails, messages, alerts</p> <p>SA4. Read pictures, drawings, notes relating to safety and health</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The individual on the job needs to know and understand:</p> <p>SA5. Question co-workers in order to understand the safety and health issues</p> <p>SA6. Inform co-workers about safety and health issues</p> <p>SA7. Report issues and problems relating to safety and health to managers in clear terms</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The individual on the job needs to know and understand how to:</p> <p>SB1. Make decisions pertaining to safety and health issues at workplace</p> <p>SB2. Make decisions about escalating safety and health issues at workplace to managers</p> <p>Plan and Organize</p>

IAS/N2003

Health and Safety at Workplace

	<p>The individual on the job needs to know and understand how to:</p> <p>SB3. Plan and organize work conforming to the safety and health norms of the company</p>
	<p>Customer Centricity</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB4. Real needs of the customer and suggest most appropriate solution</p> <p>SB5. Support customers when they need help</p>
	<p>Problem Solving</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB6. Discuss problems relating to the safety and health, evaluate the possible solution(s) and arrive at optimum /best possible solution(s)in consultation with concerned people</p>
	<p>Analytical Thinking</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB7. Use the existing information to arrive at actionable decision points</p> <p>SB8. Use the existing information for improving the customer satisfaction</p> <p>SB9. Use the existing information to optimize solution and company business</p> <p>SB10. Analyze problems and identify causes and possible solutions</p>
	<p>Critical Thinking</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB11. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action</p> <p>SB12. Anticipate problems, risks and opportunities and utilize these for mitigation and business optimization</p>

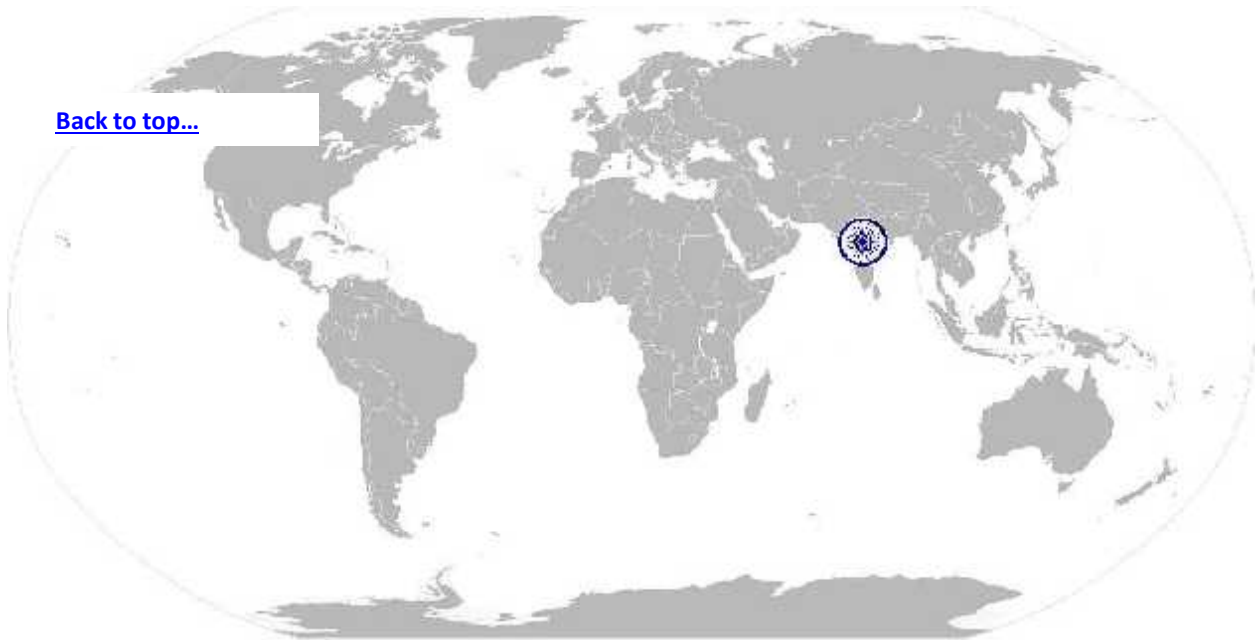
IAS/N2003

Health and Safety at Workplace

NOS Version Control

NOS Code	IAS/N2003		
Credits (NSQF)	TBD	Version number	1.0
Industry	Instrumentation Automation Surveillance and Communication	Drafted on	05/09/2017
Industry Sub-sector	Broadcast Communication	Last reviewed on	05/09/2017
Occupation	Installation & Commissioning	Next review date	05/09/20179

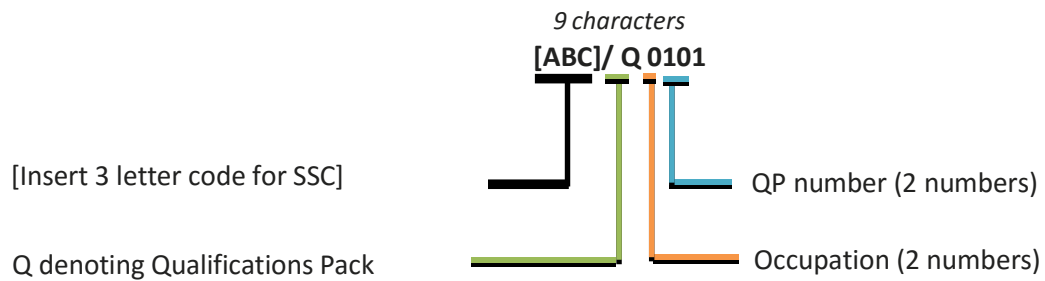
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Annexure

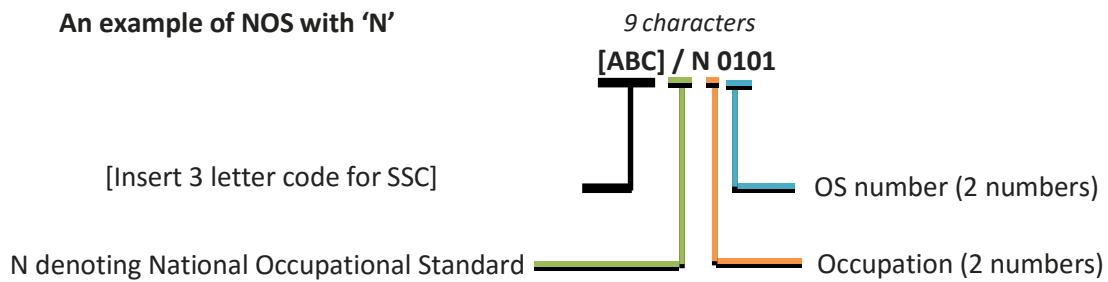
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

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

Sub-sector	Range of Occupation numbers
Installation & Commissioning	01-29
Operation & Maintenance	30-49
Calibration	50-55
Design, Fabrication / Manufacturing	56-79
Design, Fabrication, Installation & Commissioning	80-89
General	90-99

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

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CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Installation & Commissioning Technician (FM Radio Station)

Qualification Pack: IAS/Q0201

Sector Skill Council: Instrumentation Automation Surveillance & Communication

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. 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 this criterion.
6. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Relative Weight of NOSs in the Assessment			
Sl. No.	NOS no.	NOS Name	% Weightage
1	IAS/N0205	Installation of FM Radio Broadcasting Station	50
2	IAS/N0206	Support Testing of FM Radio Broadcasting Station	30
3	IAS/N2105	Work Effectively With Teams	10
4	IAS/N2003	Health and Safety at Workplace	10
			100%

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

Assessment Outcomes	Assessment Criteria for Outcomes	Total Marks (300+110+75+ 50)	Out of	Theory	Skills Practical
1. IAS/N0205 Installation of FM Radio Broadcasting Station	PC1. Study and understand the workflow of the entire broadcast chain and facility.	300	3	1	2
	PC2. Study and understand the floor plan of the Studio center site.		3	1	2
	PC3. Study, understand the placement of equipment and systems in the Studio center site.		3	1	2
	PC4. Study and understand the placement of power supply equipment of Studio Center.		3	1	2
	PC5. Study and understand the placement of ventilation and air conditioning equipment at the Studio center.		3	1	2
	PC6. Study and understand the placement of server rack/room, Cable harness etc. at the Studio Center.		3	1	2
	PC7. Study and understand the floor plan of the transmitter station site.		3	1	2
	PC8. Study and understand the placement of power supply equipment of Transmitter Center.		3	1	2
	PC9. Study, understand the placement of equipment and systems in Transmitting center.		3	1	2
	PC10. Study and understand the placement of ventilation and air conditioning equipment at the Transmitter center.		3	1	2
	PC11. Study and understand the placement of server rack/room, Cable harness etc. at the Transmitter Center.		3	1	2
	PC12. Study and understand the Technical and installation manual of all equipment being installed for the project.		3	1	2
	PC13. Mark the position of equipment and cable routing on the floor and wall in the Studio center.		5	2	3
	PC14. Mark the position of equipment and cable routing on the floor and wall in the Transmitter center.		5	2	3
	PC15. Install raceways, cable trays and conduiting work as per the drawing for electrical power wires/cables for the Studios center.		5	2	3
	PC16. Install raceways, cable trays and conduiting work as per the drawing for electrical power wires/cables for the Transmitting center.		5	2	3
	PC17. Install conduits as per the drawing for routing the audio and networking cables for both the centers.		5	2	3
	PC18. Install cable trays/raceways/wall support structure as per the drawing for laying the rigid lines, RF feeder cables etc. at the Transmitter center.		5	2	3
	PC19. Lay and terminate all the cables with appropriate sized lugs, ferrules etc in the Studio center as per the installation manual.		5	2	3

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

PC20.	Lay and terminate all the cables with appropriate sized lugs, ferrules etc in the Transmitting center as per the installation manual.	10	5	5
PC21.	Fix Connectors and Terminate Power Supply cables as per the installation manual.	10	5	5
PC22.	Fix Connectors and Terminate Audio Cables as per the installation manual.	10	5	5
PC23.	Fix Connectors and Terminate Data Cables as per the installation manual.	10	5	5
PC24.	Fix Connectors and Terminate RF rigid lines/cables as per the installation manual.	10	5	5
PC25.	Lay and route audio cables for interconnecting the audio equipment as per the installation manual.	10	5	5
PC26.	Mark all audio cables using standard notation and legends as per the installation manual.	10	5	5
PC27.	Check and reconfirm the polarity of audio connectors are as per	6	3	3
PC28.	Seal the both ends of the conduits.	7	5	2
PC29.	Take up LT power supply works like installation of LT distribution kiosk, cabling and earthing.	6	1	5
PC30.	Provide UPS backed up power to each of the equipment based the OEM's recommendation.	5	2	3
PC31.	Take up the wiring and installation of all the audio equipment, computers etc. as per the installation manual.	10	5	5
PC32.	Check and ensure that, the earth wires are securely connected to each of the equipment.	3	1	2
PC33.	Install Studio automation software for recording, Post production, playlist creation, playback and archiving functions.	5	2	3
PC34.	Take up the networking and installation of all the computers and network-enabled devices like Mixers, Telephone hybrid etc.	10	5	5
PC35.	Install studio transmitter link equipment.	10	5	5
PC36.	Take up LT power supply works like installation of LT distribution kiosk, cabling and earthing.	10	5	5
PC37.	Provide UPS backed up power to each of the equipment based on the OEM's recommendation.	3	1	2
PC38.	Mark the position of transmitter, coaxial switch, RF rigid line feeders, UPS, LT switchgear etc.. on the floor as per the Installation manual.	4	2	2
PC39.	Install RF rigid line from transmitter/RF change over output to the outdoor coaxial feeder cable through wall feed through insulator.	10	5	5
PC40.	Install cable Dehydrator and the associated plumbing for the outdoor coaxial feeder cable.	5	2	3
PC41.	Install Codec for the STL link	3	1	2

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

	PC42. Install Broadcast processor.		3	1	2
	PC43. Install FM transmitter along with, standby transmitter (if provided).		10	5	5
	PC44. Install the RF change over switch and dummy load.		5	2	3
	PC45. Install FM Demodulator, remote monitoring and monitoring equipment as per the installation manual.		5	2	3
	PC46. Check and ensure that, the earth strips are securely connected to high power equipment viz UPS and FM transmitter.		5	2	3
	PC47. Lay the indoor RF rigid lines and transmission lines in Transmitter centre for interconnecting transmitter, combiner, feeder cable as per the installation manual		10	5	5
	PC48. Electrical installation for interconnecting ESCOM incoming supply, captive power source, main distribution board, UPS, switch boards for lighting, equipment and general purpose power points.		5	2	3
	PC49. Captive power source like DG or Solar panel as per the OEM's recommendations after providing suitable foundation, exhaust arrangement etc. in a well-ventilated location and away from the FM Fix Connectors and Terminate RF rigid lines/cables as per the installation manual.		5	2	3
	PC50. Installation of UPS system and power distribution per recommended procedures and drawings.		3	1	2
	PC51. Laying of Electric wires in conduits for the luminaries over the false ceiling.		4	1	3
	PC52. Ensuring marking of all cables as per the drawing for ease of identification.		4	1	3
	PC53. Sealing of conduits with glass wool buds to prevent sound leakage and ingress of insects.		3	1	2
		Total	300	131	169
2. IAS/N0206 Support Testing of FM Radio Broadcasting Station	PC1. Check and understand the documentation on testing procedure of the entire setup provided by the respective OEM and consultant and understand the operating conditions and functioning of each of the equipment.	110	10	5	5
	PC2. Adhere to the recommended operating condition of each of the equipment and not to exceed them at any cost.		5	2	3
	PC3. Check all electric, audio, RF and Data connectivity by physical inspection.		5	2	3
	PC4. Check and ensure that, polarity for the Hot (positive/Red), Cold (negative/Black) and Ground (green) points for audio are connected as per the standard practice. Similarly, test power supply Line, Neutral and Earth are connected as per the standard practice.		5	2	3

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

	PC5. Check and log the power supply voltage and current drawn by all the major equipment using multi meter and clip-on ammeter.	3	1	2
	PC6. Check and log the AC voltage between Neutral and Earth of incoming supply, distribution board and every point socket. If the AC voltage is more than 1 V, check the earth connectivity.	3	1	2
	PC7. Check for balancing of electric power loads on all the three phases and try to balance the power to the extent possible by distributing the load, if required.	3	1	2
	PC8. Measure and log the air flow, outdoor and indoor temperatures and relative humidity to ascertain optimum working of air conditioning plants.	3	1	2
	PC9. Assist Radio Broadcast Engineer in checking the proper functioning of each of the equipment, measure and log the performance of each of the audio/RF equipment as per	15	5	10
	PC10. Assist Radio Broadcast Engineer in measuring all important parameters of sound recording studio viz Ambient sound pressure level using SPL meter, RT60 measurement and STI. Audio performance measurements include THD, SNR, response, insertion loss etc. of the entire chain from microphone to STL equipment input.	15	5	10
	PC11. Assist Radio Broadcast Engineer in checking and carry out RF measurements that includes measurement of Return loss of the combined feeder cable/antenna during cold condition and forward/reflected power during the operating condition of the transmitter and Transfer Switch. In case of deviation, seek advice from the consultant and troubleshoot the problem.	15	5	10
	PC12. Check and log important parameters displayed by the Transmitter's front panel for reference. Check the User Manual of the equipment for normal readings.	5	2	3
	PC13. Make visual check for normal performance of the entire system.	10	5	5
	PC14. Arrange for listening tests of the chain and final broadcast	5	2	3
	PC15. Arrange facilities for on-hand training the station staff on the operation and maintenance of the setup	8	3	5
	Total	110	42	68
3.IAS/N2105 Work Effectively With Teams	PC1. Know and understand the team objectives and goals	3	1	2
	PC2. Know team members by name. Greet them appropriately and respond to their greetings.	2	1	1
	PC3. Know the roles and responsibilities of team members. Ensure others know about you and your role in the team	2	1	1
	PC4. Learn about the culture and preferences of team members –especially if they belong to other organizations or nationalities	5	1	4

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

PC5. Follow organization's policies and procedures for working with team members within and outside the organization – especially relating to privacy, confidentiality and security.	75	2	1	1
PC6. Create an environment of trust and mutual respect		3	1	2
PC7. Use appropriate mode of communication – verbal, written, mail, phone or text and clearly articulate your message to ensure that the recipient understands the message.		2	1	1
PC8. Listen to team members and try to understand what they are		3	1	2
PC9. Communicate professionally and follow organization protocols. Do not overload the team members with unnecessary and unsolicited information		4	1	3
PC10. Share important information with the team timely.		3	1	2
PC11. Respond to communications promptly.		3	1	2
PC12. Perform own role and produce output in time for other team members to consume		3	1	2
PC13. Receive inputs from others and work upon it per role requirement		2	1	1
PC14. Make adjustments within the permissible rules so that work flows smoothly.		2	1	1
PC15. Help team members to perform their role effectively and provide any clarifications and support they need		2	1	1
PC16. Share tools and common resources fairly, taking cognizance of others' needs and schedules		2	1	1
PC17. Resolve any contentious issues amicably, involving the team lead or the supervisor if needed		2	1	1
PC18. Let team members know in good time if you cannot carry out your commitments, explaining the reasons and alternate solutions, if any. Let the team lead know about this.		2	1	1
PC19. Think positively and make constructive suggestions to meet the goals		2	1	1
PC20. Accept and give suggestions with open mind		2	1	1
PC21. Take initiatives and volunteer to contribute		2	1	1
PC22. Help team members with facts and figures to arrive at workable decisions		2	1	1
PC23. Accept decisions professionally and support these, even if these do not match your suggestions and personal views		4	1	3
PC24. Act in the interest of the team and the organization to ensure that things do not 'fall through the gap' and team goals are achieved.		4	1	3
PC25. Take initiative to correct the situation if something seems to be		2	1	1
PC26. Seek help or escalate if the situation demands		2	1	1

Qualifications Pack For Installation & Commissioning Technician (FM Radio Station)

	PC27. Follow organization's and statutory guidelines about making references or comments to social customs or preferences		2	1	1
	PC28. Refrain from making any comments to hurt sentiments		2	1	1
	PC29. Accommodate team members' preferences to the extent feasible. If these come in the way of fulfilling team goals, discuss with the supervisor/ team leader.		2	1	1
	PC30. Seek information and clarifications from others if you do not understand any customs.		2	1	1
		Total	75	30	45
4. IAS/N2003 Health and Safety in Workplace	PC1. Comply with general safety procedures followed in the company	50	3	2	1
	PC2. Follow standard safety procedures while handling an equipment, hazardous material or tool		2	1	1
	PC3. Remove finger rings or any other metal objects likely to interfere with the work before working on the unit		4	2	2
	PC4. Use of safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.		4	1	3
	PC5. Escalate about any hazardous materials or things found in the premises		4	1	3
	PC6. Report about any breach of safety procedure in the company		3	1	2
	PC7. Ensure zero accidents at work		5	2	3
	PC8. Avoid damage of components due to negligence in ESD procedures		4	1	3
	PC9. Participate regularly in fire drills or other safety related workshops organized by the company		5	2	3
	PC10. Ensure no loss for company due to safety negligence		4	1	3
	PC11. Maintain appropriate posture, especially in long hours of sitting or standing position and in handling heavy materials		4	2	2
	PC12. Participate in company organized health sessions such as yoga, physiotherapy or games		4	2	2
	PC13. Handle heavy and hazardous materials with care and using appropriate tools and handling equipment such as trolleys, jacks and ladders		4	2	2
		Total	50	20	30

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