



QUALIFICATION FILE

Building Automation Specialist

- ☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship
☐ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

General ☐ *Multi-skill (MS)* ☒ *Cross Sectoral (CS)* ☐ *Future Skills* ☐ *OEM*

NCrF/NSQF Level: 5

Submitted By:

Instrumentation Automation Surveillance & Communication Sector Skill Council

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Table of Contents

Section 1: Basic Details.....	3
Section 2: Training Related	9
Section 3: Assessment Related	10
Section 4: Evidence of Need of the Qualification file	12
Section 5: Annexure Check List	13
Annexure: Evidence of Level	14
Annexure: Learning Outcomes and Assessment Criteria	18
Annexure: Assessment Strategy.....	18
Annexure: Tools and Equipment.....	30
Annexure: Industry Validations Summary	31
Annexure: Training Details	34
Annexure: Blended Learning.....	34
Annexure: Acronym and Glossary	36

Section 1: Basic Details

1.	Qualification Name	Building Automation Specialist																
2.	Sector/s	Instrumentation																
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options OEM	NQR Code & version of existing/previous qualification: 2022/CON/IASC/06499, V5.0	Qualification Name of existing/previous version: Building Automation Specialist															
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA																
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval.)	QG-05-CG-045542025-V2-IASC	6. NCrf/NSQF Level: 5															
7.	Award (Certificate/Diploma/Advanced Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																
8.	Brief Description	Performs system design, wiring, integration, testing, installation & maintenance of automation systems in buildings involving HVAC, FAS, ACS & CCTV Systems.																
9.	Eligibility Criteria for Entry for Students/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Completed 2nd year of BE/B-Tech in relevant field*</td> <td></td> </tr> <tr> <td>2</td> <td>Completed 3-year Engineering diploma (after 10th)</td> <td>1.5 years</td> </tr> <tr> <td>3</td> <td>Previous NSQF Level 4.5</td> <td>1.5 years</td> </tr> <tr> <td>4</td> <td>Previous NSQF Level 4</td> <td>3 years</td> </tr> </tbody> </table> * Instrumentation/Mechanical/EEE/ECE/Mechatronics b. Age: NA		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Completed 2 nd year of BE/B-Tech in relevant field*		2	Completed 3-year Engineering diploma (after 10th)	1.5 years	3	Previous NSQF Level 4.5	1.5 years	4	Previous NSQF Level 4	3 years
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																
1	Completed 2 nd year of BE/B-Tech in relevant field*																	
2	Completed 3-year Engineering diploma (after 10th)	1.5 years																
3	Previous NSQF Level 4.5	1.5 years																
4	Previous NSQF Level 4	3 years																

10.	Credits Assigned to this Qualification, Subject to Assessment <i>(as per National Credit Framework (NCrF))</i>	19	11. Common Cost Norm Category (I/II/III) <i>(wherever applicable): I</i>																						
12.	Any Licensing Requirements/ Pre-requisites for Undertaking Training <i>(wherever applicable)</i>	NA																							
13.	Training Duration by Modes of Training Delivery <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	☒ Offline Only ☐ Online Only ☐ Blended																							
		<table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>210</td> <td>210</td> <td>150</td> <td>0</td> <td>570</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	210	210	150	0	570	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																				
Classroom (offline)	210	210	150	0	570																				
Online																									
		<i>(Refer Blended Learning Annexure for Details)</i>																							
14.	Aligned to NCO/ISCO Code/s <i>(if no code is available mention the same)</i>	NCO-2015/2149.0100																							
15.	Progression path after attaining the qualification <i>(Please show Professional and Academic progression)</i>	Sr. Specialist/Consultant/Head																							
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																							
17.	Is similar Qualification(s) available on NQR-if yes, justification for	☐ Yes ☒ No URLs of similar Qualifications:																							

	this qualification		
18.	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If “Yes”, specify applicable type of Disability:	
19.	How Participation of Women will be Encouraged	Training on this job role is planned for school only and female candidates will also be encouraged	
20.	Are Greening/ Environment Sustainability Aspects Covered <i>(Specify the NOS/Module which covers it)</i>	☐ Yes ☒ No	
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No	
22.	Name and Contact Details of Submitting / Awarding Body SPOC <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: Mayank Bansal Email: sqa@iascsectorskillcouncil.in Contact No.: 9599284350 Website: https://iascsectorskillcouncil.in/	
23.	Final Approval Date by NSQC: 07/10/2025	24. Validity Duration: 03 Years	25. Next Review Date: 07/10/2028

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version <i>(if applicable)</i>	Core/ Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) <i>(if applicable)</i>

1.	Design, Install and Provide Technical Support for HVAC System	IAS/N8014	Core	5	4	30	60	30	-	120	30	40	20	10	100	20
2	Design, Install and Provide Technical Support for Fire Alarm Systems	IAS/N8015	core	5	4	30	60	30	-	120	30	40	20	10	100	20
3.	Install and Provide Technical Support for Access Control Systems	IAS/N8016	Core	5	3	30	30	30	-	90	40	50	10	-	100	10
4	Install and Provide Technical Support for CCTV Surveillance Systems	IAS/N2103	core	5	3	30	30	30	-	90	40	60	-	-	100	10
5	Integrating and Controlling Building Automation Systems	IAS/N2104	Core	5	2	15	15	30	-	60	40	60	-	-	100	10
6.	Employability Skill	DGT/VSQ/N0102	Non-Core	5	2	60	-	-	-	60	20	30	-	-	50	10
7	Integration of Smart Technologies in HVAC, lighting, security, and other building automation systems	IAS/N 8012	core	5	1	15	15	-	-	30	30	70	-	-	100	10
Duration (in Hours) / Total Marks					19	210	210	150	-	570	230	350	50	20	650	100

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																

Duration (in Hours) / Total Marks														
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Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70% (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: 70% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in relevant sector (in years) (as per requirement and NCVET guidelines)	Diploma (Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 2 year of industry (domain) experience and 1 year of teaching experience OR B.E./B.Tech. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 1 year of industry (domain) experience and 1 year of teaching experience OR M.Sc. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics) with 1 year of industry (domain) experience and 1 year of teaching experience (Instrumentation/EEE/ECE/Mechanical/Electrical/Mechatronics)
2.	Master Trainer's Qualification and experience in relevant sector (in years) (as per requirement and NCVET guidelines)	Diploma (Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 3 year of industry (domain) experience and 2 year of teaching experience OR B.E./B.Tech. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 2 year of industry (domain) experience and 2 year of teaching experience OR M.Sc. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics) with 2 year of industry (domain) experience and 2 year of teaching experience (Instrumentation/EEE/ECE/Mechanical/Electrical/Mechatronics)
3.	Tools and Equipment Required for Training	☐ Yes ☐ No (If "Yes", details to be provided in Annexure)

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	Diploma (Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 4 year of industry (domain) experience and 3 year of teaching experience OR B.E./B.Tech. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 3 year of industry (domain) experience and 3 year of teaching experience OR M.Sc. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics) with 3 year of industry (domain) experience and 3 year of teaching experience (Instrumentation/EEE/ECE/Mechanical/Electrical/Mechatronics)
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	Diploma (Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 5 year of industry (domain) experience and 4 year of teaching experience OR B.E./B.Tech. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 4 year of industry (domain) experience and 4 year of teaching experience OR M.Sc. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics) with 4 year of industry (domain) experience and 4 year of teaching experience (Instrumentation/EEE/ECE/Mechanical/Electrical/Mechatronics)
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	Diploma (Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 5 year of industry (domain) experience and 4 year of teaching experience OR B.E./B.Tech. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics or similar trades) with 4 year of industry (domain) experience and 4 year of teaching experience OR M.Sc. (Civil/Mechanical / Civil / Industrial / Instrumentation / Electrical/ Mechatronics/ Electronics) with 4 year of industry (domain) experience and 4 year of teaching experience (Instrumentation/EEE/ECE/Mechanical/Electrical/Mechatronics)
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Mode: ☐ Online Only ☐ Offline Only ☒ Blended
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☒ No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

Section 5: Evidence of the need for the Qualification

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): In Process
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): In Process
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validations provided: 21
5.	Estimated nos. of people to be trained and employed: Approx. 3000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes If “No”, why:

NSQC Approved

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	Annexure 1
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Annexure 2
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Annexure 3
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Annexure 4
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>	
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	Yes
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Annexure 5
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Annexure 6
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Annexure 7
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Annexure 8

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge /Process	Knowledge facts, concepts, and principles that need to be known and/or understood to accomplish a task or to solve a problem. Responsible for designing and prototyping needed for various processes of Building operations.	The theoretical and practical skills of the individual are applied to work in a predictable and familiar context. The evolving nature of the business and technology environment demands dealing with new scenarios and adapting solutions in the context of the target industry quickly, which makes the process adaptive and non-routine. Demonstrate the need for an automation solution, business growth, industry communication, conversion of sales target, etc.	5
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Provide technical insights and advice to clients, positioning yourself as a trusted automation advisor. • Collaborate with technical teams to tailor automation solutions to clients' unique requirements. • Design and present customized proposals that showcase the value of our automation offerings.	The target learner is the industry professional who analyses the need of Building equipment and its efficiency, including need of modification/upgradation. •	5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Candidates will be able to complete the assignment of introducing the need of business target and sales of product / machine and its automation.	A range of cognitive and practical skills are required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials, and information.	5

Broad Learning Outcomes/Core Skill	Able to market the technical (automation) need in the industry. candidate may carry out a job requiring a limited range of routine and predictable activities. Candidates will be able to:	The individual in this job will connect with the automation industry to market and sale the industrial automation product and create connections with manufacturing companies by which solution can be provided Business-to-Business.	5
Responsibility	Individual will be responsible for market the automation solution for the company, including: - Automation Solutions Sales - Consultative Selling	Identify opportunities to expand clients' adoption of automation solutions, upselling relevant products and services. - Identify and prospect potential clients interested in adopting automation technologies. - Engage with leads through various channels, including emails, phone calls, and presentations.	5

Annexure: Learning Outcomes and Assessment Criteria

Detailed learning outcomes and assessment criteria for the qualification are as follows:

NOS/Module Name	Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
IAS/N2100: Design, Install and Provide Technical Support for HVAC System	<i>Capturing the requirements of HVAC Systems by site survey</i>	10	12	-	-
	Capturing the work requirements of the client by site survey	1	2	-	-
	Developing the BOQ according to the requirements of the client	2	2	-	-
	Creating 2D models using BAS Software	2	2	-	-
	Developing a program on BAS Tools for HVAC	2	2	-	-
	Developing a program on BAS Tools based on Logic gates	2	2	-	-
	<i>Developing a program related to Air Conditioning on BAS Tools</i>	1	2	-	-
	Managing wiring of components in AC Drives and Soft Starters	6	10	-	-
	<i>Suggesting and getting approval from the customer for HVAC Systems</i>	1	2	-	-
	Suggesting appropriate HVAC components to the customer according to the site	1	3	-	-
	Assisting the customer in choosing different types of technologies and specifications used in HVAC Systems	1	2	-	-
	Taking approval from the customer	1	1	-	-
	Maintaining complete documentation of the components to be installed	-	-	-	-

	Installing approved HVAC components as per site requirements	2	2	-	-
	Collecting and checking components at customer premises as per checklist	2	2	-	-
	Assisting technicians for checking hardware components before FAS Installation	1	2	-	-
	Replacing FAS components if found malfunctioning	2	2	-	-
	Preparing Checklist and ensure the availability of every component before installation	1	2	-	-
	Installing FAS components at the customers site	2	2	-	-

	Installing fire Detection components as per site requirement	2	2	-	-
	Installing Heat/RoR Detectors, Smoke Detectors and Multi Criteria detectors as per requirement	1	3	-	-
	Wiring Electrical and Electronics components as per the requirements	8	13	-	-
	Wiring Power Supplies, Earthing & Grounding	1	2	-	-
	Wiring and connecting Shielded & Unshielded Cables, Cable Gauges, SWG & AWG sizes	2	2	-	-
	Ensuring adequate length of connecting cables as per the requirements	1	2	-	-
	Wiring of FAS hardware	1	3	-	-
	Using proper terminals as prescribed for joining cables	1	2	-	-
	Use power cable for connecting power supply with proper rating	2	2	-	-
	Testing of new systems at customer site	8	13	-	-
	Testing installed FAS components at customer premises	2	1	-	-
	Ensuring proper working of the installed HVAC System	1	3	-	-
	Assuring 100% satisfaction from the customer after installation	2	2	-	-
	Troubleshooting errors if the system is not working as per the requirements	1	3	-	-
	Providing Technical Support for HVAC Systems	2	4	-	-
	Calculating total number of HVAC controllers as per I/O summary	8	20	-	-
	Managing the refrigeration process needed for the site by BAS controller	2	4	-	-
	Managing Wiring and drawings of Components used in Centralized Air- Conditioning	2	4	-	-
	Providing Technical Support for HVAC functions using BAS controller	2	4		-

	<i>Calculating Heat Load</i>	1	4		
	<i>NOS Total</i>	55	75	-	-
IAS/N2101: Design, Install and Provide Technical Support for Fire Alarm Systems	<i>Capturing the requirements of Fire Alarm Systems by site survey</i>	10	12	-	-
	Capturing work requirements of the client by site survey	1	2	-	-
	<i>Developing BOQ according to the requirements of the client</i>	2	2	-	-
	<i>Assisting customers about different types of technologies used in FAS according to the need of site</i>	2	2	-	-
	<i>Ensuring that Suggesting components matches to customers requirement</i>	2	2	-	-
	<i>Assisting the customers about the company policies towards services and warranty</i>	2	2	-	-
	<i>Managing proper documentation of site survey and customers requirements</i>	1	2	-	-
	<i>Suggesting and taking approval from the customer for Fire Alarm Systems</i>	6	10	-	-
	Suggesting appropriate FAS components to the customer according to the site	1	2	-	-
	Assisting the customers about Fire Alarm systems with their specifications	1	3	-	-
	Taking approval for installing FAS components from the customer	1	2	-	-
	Preparing and assembling FAS components as per the requirement	1	1	-	-
	Creating check list before going to the site for installation	-	-	-	-
	Maintaining complete documentation of the components to be installed	2	2	-	-
	<i>Installing approved Fire Alarm components as per site requirements</i>	11	15	-	-
	Collecting and checking of components before moving to customer premises	2	2	-	-
	Assisting technicians for checking hardware components before FAS Installation	1	2	-	-
	Replacing FAS components if found malfunctioning	2	2	-	-
	Preparing Checklist and ensure the availability of every component before installation	1	2	-	-
	Installing FAS components at the customers site	2	2	-	-
	Installing fire Detection components as per site requirement	2	2	-	-
	Installing Heat/RoR Detectors, Smoke Detectors and Multi Criteria detectors as per requirement	1	3	-	-
	<i>Wiring Electrical and Electronics components as per the requirements</i>	8	13	-	-
	Wiring Power Supplies, Earthing & Grounding	1	2	-	-
	Wiring and connecting Shielded & Unshielded Cables, Cable Gauges, SWG & AWG sizes	2	2	-	-

	Ensuring adequate length of connecting cables as per the requirements	1	2	-	-
	Wiring of FAS hardware	1	3	-	-
	Using proper terminals as prescribed for joining cables	1	2	-	-
	Use power cable for connecting power supply with proper rating	2	2	-	-
	<i>Testing of new systems at customer site</i>	8	13	-	-
	Testing installed FAS components at customer premises	2	1	-	-
	Ensuring proper working of every component	1	3	-	-
	Ensuring proper working of FAS systems before leaving the site and explaining the customer how to operate the system properly	2	2	-	-
	Assuring 100% satisfaction from the customer after installation	1	3	-	-
	Troubleshooting the errors if the system is not working as per the requirements	2	4	-	-
	<i>Providing Technical Support for Fire Alarm Systems at the site</i>	9	10	-	-
	Providing Technical Support for Fire Detection & Alarm System as per Fire Life cycle and Class of Fire	2	2	-	-
	Providing Technical Support for intelligent Fire Panels & conventional Fire Panels installed	2	2	-	-
	Managing Detector & Device Wiring Schema	2	2	-	-
	Integrating Fireman's Telephony & Talkback system with fire alarm	2	2	-	-
	Selecting Fire Safety Strategies for prevention	1	2	-	-
	NOS Total	52	73	-	-
IAS/N2102: Install and Provide Technical Support for Access Controls Systems	<i>Capturing the requirements of Access Controls Systems by site survey</i>	9	9	-	-
	Capturing work requirements of the client by site survey	2	1	-	-
	Developing BOQ according to the requirement of the client	2	2	-	-
	Assisting customer about different types of technologies used in Access Control Systems according to the need of site	1	2	-	-
	Ensuring that Suggesting components matches to customers requirement	2	1	-	-
	Assisting the customers about the company policies towards services and warranty	1	1	-	-
	Managing proper documentation of site survey and customers requirements	1	2	-	-
	<i>Suggesting and taking approval from the customer for Access Controls System</i>	6	8	-	-
	Suggesting appropriate Access Controls components to the customer according to the site	1	2	-	-
	Assisting the customers about technologies used in Access Control systems with their specifications	1	1	-	-
	Taking approval for installing Access Control Systems from the customer	1	1	-	-

95	Preparing and assembling Access Control Systems components as per the requirement	1	1	-	-
	Creating check list before going to the site for installation	1	2	-	-
	Maintaining complete documentation of the components to be installed	1	1	-	-
	<i>Installing approved Access Controls components as per site requirements</i>	9	17	-	-
	Collecting and checking of components before moving to customer premises	1	1	-	-
	Assisting technicians for checking hardware components before Installation	1	1	-	-
	Replacing components if found malfunctioning	1	3	-	-
	Preparing Checklist and ensure the availability of every component before installation				
		2	4	-	-
	Installing components at the customers site	2	3	-	-
	Installing hardware such as smart hub, RFID Card, Door control unit, card readers etc.	1	3	-	-
	Ensuring that components are matching with customers requirement and installed as per standard operating operation				
		1	2	-	-
	<i>Wiring Electrical and Electronics components as per specifications</i>	3	6	-	-
	Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.				
		1	1	-	-
	Ensuring adequate length of cables are available for installation	1	2	-	-
	Wiring of Power Supplies, Earthing & Grounding.	1	3	-	-
	<i>Testing Access Control systems at customer premises</i>	11	22	-	-
		2	3	-	-
	<i>Checking voltage and resistance at all appropriate points of the system</i>				
	<i>Correcting alignment and operation of access point hardware</i>	2	4	-	-
	Verifying access levels	1	3	-	-
	Checking correct operation of each reader	1	2	-	-
	Testing Release time for each lock using software	1	1	-	-
	Checking the signals if doors are held open and signaling is required	1	1	-	-
	Checking all the data for correct entry in the ACS software	1	3	-	-
	Checking alarms to display correctly	1	3	-	-
	Defining level of particular object in the software	1	2	-	-
	<i>Providing Technical Support for Access Controls Systems</i>	10	19	-	-
	Identifying the operating system and software requirement for the access control system				
		1	3	-	-
	Providing Technical Support for Access controls devices at the customer premises	1	2	-	-
	Commissioning Access Controls Systems performance as per customer requirements	1	2	-	-

	Achieving zero errors in commissioning as per company policy	1	2	-	-
	Identifying problems and alert on time	1	2	-	-
	Fixing for any errors (if any) identified	1	2	-	-
	Verifying software implementation checks of input/output I/O points (AI, AO, DI,DO)	1	2	-	-
	Verifying sensor calibration, control sequence logic, graphics and alarm code	2	2	-	-
	Performing software functionality test	1	2	-	-
	<i>Achieving Quality and Productivity as per company norms</i>	9	12	-	-
	Achieving 100% work schedule as planned for the week	1	2	-	-
	Meeting 100% daily or monthly target	2	2	-	-
	Achieving zero component damage	1	2	-	-
	Keeping work area clean and organized	2	2	-	-
	Identifying problems and alert in time	2	2	-	-
	Achieving 100% compliance with health and safety guidelines and rules	1	2	-	-
	NOS Total	57	93	-	-
IAS/N2103: Install and Provide Technical Support for CCTV Surveillance Systems	<i>Capturing the requirements of CCTV Surveillance Systems by site survey</i>	7	9	-	-
	Capturing work requirements of the client by site survey	2	1	-	-
	Developing BOQ according to the requirement of the client	1	2	-	-
	Assisting customer about different types of technologies used in CCTV Surveillance Systems according to the need of site	1	2	-	-
	Ensuring that Suggesting components matches to customers requirement	1	2	-	-
	Assisting the customers about the company policies towards services and warranty	1	1	-	-
	Managing proper documentation of site survey and customer requirements	1	1	-	-
	<i>Suggesting and taking approval from the customer for CCTV System to be installed</i>	6	8	-	-
	Suggesting appropriate CCTV components to the customer according to the site	1	2	-	-
	Assisting the customers about technologies used in CCTV systems with their specifications	1	1	-	-
	Taking approval for installing CCTV Systems from the customer	1	1	-	-
	Preparing and assembling CCTV Systems components as per the requirement	1	1	-	-
	Creating check list before going to the site for installation	1	1	-	-
	Maintaining complete documentation of the components to be installed	1	2	-	-
	<i>Installing approved CCTV components as per site requirements</i>	12	19	-	-
	Assisting procurement of hardware required for CCTV system installation	1	1	-	-
	Collecting and checking of components before going to customer premises	1	1	-	-
	Assisting technicians for checking hardware components before Installation	-	-	-	-
	Replacing components if found malfunctioning	1	1	-	-

	Preparing Checklist and ensure the availability of every component before installation	1	3	-	-
	Installing CCTV components at the customers site	2	3	-	-
	Mounting the CCTV camera so as to cover maximum area	1	2	-	-
	Deciding on the height of camera installation according to the end purpose	1	2	-	-
	Setting up the camera such as pan, tilt, zoom unit as per customer requirements	1	2	-	-
	Set camera controls	1	2	-	-
	Connecting the power and video output cable to the camera	1	1	-	-
	Ensuring that all the hardware matches the customer requirement, agreed features and specifications	1	1	-	-
	<i>Wiring Electrical and Electronics components as per specifications</i>	9	16	-	-
	Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.	1	3	-	-
	Ensuring adequate length of cables are available for installation	2	3	-	-
	Wiring Power Supplies, Earthing & Grounding.	2	3	-	-
	Laying the cables in the building or site to connect the camera and system	1	2	-	-
	Using BNC connectors for joining cables and crimping them	1	2	-	-
	Using power cable of specified thickness to connect CCTV system with power supply	1	1	-	-
	Connecting all the cables from multiple cameras to the CCTV system area	1	2	-	-
	<i>Testing CCTV Components at customer premises</i>	7	15	-	-
	Checking voltage and resistance at all appropriate points of the system	1	2	-	-
	Correcting alignment and operation of CCTV hardware	1	2	-	-

	Checking correct operation of each component. Ensure that there are no malfunctioning, if yes then replace the component	1	3	-	-
	Checking the signals of CCTV components	1	2		
	Checking all the data received by CCTV as per the requirement	1	2		
	Ensuring that there are no cable joins, sharp bends during cabling	1	2		
	Ensure 100% satisfaction from customers for all the installed components	1	2		
	<i>Providing Technical Support for CCTV Systems</i>	8	16		
	Providing Technical Support for CCTV devices at the customer premises	1	2		
	Commissioning CCTV Systems performance as per customer requirements	1	2		
	Achieving zero errors in commissioning as per company policy	1	2		
	Identifying problems and alert on time	1	2		
	Fixing for any errors (if any) identified	1	2		
	Verifying software implementation checks;(AI, AO, DI,DO) I/O points	1	2		
	Ensuring zero-material damage while handling the equipment during installation process	1	2		
	Performing software functionality test	1	2		
	<i>Achieving Quality and Productivity as per company norms</i>	6	12		
	Achieving 100% work schedule as planned for the week	1	2		
	Following standard operating procedure of tools and equipment and avoid any hazard	1	2		
	Achieving zero component damage	1	2		
	Keeping work area clean and organized	1	2		
	Achieving 100% compliance with health and safety guidelines and rules	1	2		
	Ensuring installed components as per company norms and standards	1	2		

	NOS Total	55	95	-	-
IAS/N2104: Integrating and Controlling Building automation System	<i>Integrating HVAC Components</i>	9	10		
	Installing and Controlling HVAC Components using DDC Controllers	2	2		
	Graphically monitor, control, alarm and diagnose Building Equipment remotely	2	2		
	Creating communication between DDC Controllers using data Bus	1	2		
	Using BACnet, LON(Echelon) and MODBUS to communicate on data Bus	2	2		
	Integrating installed HVAC Components with other Building Automation Systems using Software and programming on Single Control Panel	2	2		
	<i>Integrating Fire Alarm Systems</i>	6	10		
	Integrating different detectors such as Heat, Smoke, Flame Ionization Detectors, Beam Detectors etc. with control panel	1	2		
	Using Conventional Systems and analogue addressable systems for fire panels	1	2		
	Creating and testing communication between control panel and detectors	1	2		
	Using Intelligent addressable systems as per the requirement	1	1		
	Integrating Fire Alarm Components with central fire alarm system	1	1		
	Integrating Fire alarm system with centralized control panel	1	2		
	<i>Integrating Access Control Devices</i>	15	25		
	Inter facing between different networks used in Access Controls systems	1	2		
	Integrating tailgate detectors to remove unauthorized access	1	1		
	Controlling and monitoring multiple doors using reader controllers	1	1		
	Creating communication between control panel and access control servers	2	1		

	Integrating DIU (Door interface Units)	1	3		
	Integrating access control and intrusion detection	2	4		
	Installing Biometric systems on application device	2	3		
	Installing and creating communication between magnetic locks and doors	1	3		
	Managing Smart card management systems	1	2		
	Integrating Access Control System with Time/Attendance payroll system	1	1		
	Managing Weigand Communication for specific interface between card and readers.	1	1		
	Integrating Access Control devices with BAS control Panel	1	3		
	<i>Integrating CCTV Surveillance Systems</i>	12	26		
	Managing Iris and Auto Iris functionality of installed CCTV System	2	3		
	Managing Automatic Shutter Speed	2	4		
	Creating communication between CCTV Camera and DVR or NVR	1	3		
	Managing Automatic Gain Control	1	2		
	Managing Synchronization between installed CCTV Camera	1	1		
	Creating communication between IP cameras and network	1	3		
	Managing NVR and NVR Software	1	3		
	Installing and managing Facial and number plate recognition system	1	2		
	Integrating CCTV Surveillance System with Security system to provide centralized management of access control	1	3		
	Integrating centralized Access Control System with Building Automation System control Panel	1	2		
	<i>Controlling and Supervising Building Automation Systems using Control Panel</i>	4	8		

	Testing of overall integrated Building Automation System through control panel	1	2		
	Ensuring proper working and controlling of every installed device using control panel	1	2		
	Assuring 100% satisfaction from the customer after installation of BAS	1	2		
	Troubleshooting errors if the system is not working as per the requirements	1	2		
	NOS Total	46	79	-	-
DGT/VSQ/N0102: Employability Skills (60 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	identify employability skills required for jobs in various industries	-	-	-	-
	identify and explore learning and employability portals	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	4	4		1
	follow environmentally sustainable practices	1			1
	<i>Becoming a Professional in the 21st Century</i>	6	10		1
	recognize the significance of 21st Century Skills for employment	2	6		1
	practice the 21st Century Skills such as Self- Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	2			
	<i>Basic English Skills</i>	2	4		
	use basic English for everyday conversation in different contexts, in person and over the telephone	8	18		1
	read and understand routine information, notes, instructions, mails, letters etc. written in English	2	6		
	write short messages, notes, letters, e-mails etc. in English		6		1
	<i>Career Development & Goal Setting</i>	2			
	understand the difference between job and career	4	6		
	prepare a career development plan with short- and long-term goals, based on aptitude	11	14		3
	<i>Communication Skills</i>	2	4		
	follow verbal and non-verbal communication etiquette and active listening techniques in various settings	2			1

	work collaboratively with others in a team	2	6		1
	<i>Diversity & Inclusion</i>	1			1
	communicate and behave appropriately with all genders and PwD	2	4		
	escalate any issues related to sexual harassment at workplace according to POSH Act	2			
	<i>Financial and Legal Literacy</i>	13	12		5
	select financial institutions, products and services as per requirement	2	2		1
	carry out offline and online financial transactions, safely and securely	2	4		
	identify common components of salary and compute income, expenses, taxes, investments etc	4	2		1
	identify relevant rights and laws and use legal aids to fight against legal exploitation	1	1		
	<i>Essential Digital Skills</i>	1	1		1
	operate digital devices and carry out basic internet operations securely and safely	1	1		1
	use e- mail and social media platforms and virtual collaboration tools to work effectively	2	1		1
	use basic features of word processor, spreadsheets, and presentations	6	8		1
	<i>Entrepreneurship</i>	2	3		1
	identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	2	1		
	develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	2	4		
	identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	4	5		1
	<i>Customer Service</i>	2	1		1
	identify different types of customers	1	3		
	identify and respond to customer requests and needs in a professional manner.	1	1		
	follow appropriate hygiene and grooming standards	4	5		1
	<i>Getting ready for apprenticeship & Jobs</i>	1	1		1
	create a professional Curriculum vitae (Résumé)	1	2		
	search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	1	1		
	apply to identified job openings using offline /online methods as per requirement	1	1		
	answer questions politely, with clarity and confidence, during recruitment and selection	2	2		1
	identify apprenticeship opportunities and register for it as per guidelines and requirements	1	1		

	NOS Total	20	30	-	-
	<i>Assessing the specific operational requirements of Smart Technologies</i>	5	20	-	-
IAS/Nxxx: Integration of Smart Technologies in HVAC, lighting, security, and other building automation systems	Evaluate the ability of new smart technologies to integrate seamlessly with existing building management systems (BMS).	1	4	-	-
	Assess the intuitiveness and user-friendliness of the system interfaces for operators and occupants.	1	4	-	-
	Check the system's capability for real-time analytics and reporting features.	1	4	-	-
	Examine the ability of the system to scale up or down based on changing operational needs or technological advancements.	1	4	-	-
	Analyze the total cost of ownership, including upfront costs, ongoing maintenance, and operational savings.	1	4	-	-
	<i>Developing integrated platforms that centralize control and monitoring of all building systems</i>	5	20	-	-
	Develop a user-friendly interface that provides real-time monitoring and control of all building systems.	1	4	-	-
	Implement a central control unit that can process inputs from various building systems and execute commands accordingly.	1	4	-	-
	Define user roles and permissions to limit access to sensitive data and functions.	1	4	-	-
	Incorporate tools for tracking energy usage and generating reports to support energy efficiency initiatives.	1	4	-	-
	Regularly assess cybersecurity measures and aim for zero breaches or significant incidents.	1	4	-	-
	<i>Deploying advanced monitoring systems that provide real-time insights.</i>	10	15	-	-

	<i>Enhance the Capability to manage all building systems (HVAC, lighting, security) from a single interface.</i>	2	2	-	-
	<i>Implement systems to analyze and optimize energy consumption across all building systems.</i>	2	3	-	-
	<i>Measure the percentage of devices successfully integrated with the monitoring system.</i>	2	2	-	-
	<i>Track the rate of successfully identified vs. undetected anomalies in system performance.</i>	2	3	-	-
	<i>Evaluate the system's ability to incorporate future advancements in smart technologies.</i>	1	2	-	-
	<i>Develop Automated alerts for users regarding system performance anomalies or failures.</i>	1	3	-	-
	<i>Identify and connect all relevant data sources, including sensors, controllers, and monitoring systems.</i>	2	4	-	-
	<i>Utilize a centralized database to securely store collected data for easy retrieval and analysis.</i>	3	3	-	-
	<i>Develop automated report generation capabilities that can produce performance reports on a scheduled basis or upon request.</i>	2	4	-	-
	<i>Create user-friendly dashboards that visualize system performance data in real-time, with options for drilldowns into detailed reports.</i>	3	4	-	-
	NOS Total	30	70	-	-
Total Marks		230	350	50	20

Annexure: Tools and Equipment

List of Tools and Equipment

Batch Size: 30 Candidate

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Laptop	As per requirement	As per requirement
2	white board	As per requirement	As per requirement
3	marker	As per requirement	As per requirement
4	projector	As per requirement	As per requirement
5	first aid	As per requirement	As per requirement
6	FAS and sensors	As per requirement	As per requirement
7	Fire safety gadgets and accessories	As per requirement	As per requirement
8	Software	As per requirement	As per requirement
9	BMS Software	As per requirement	1
10	PLC	As per requirement	1
11	Lighting / A.C. control with Motion sensor	As per requirement	1
12	Fire Detection Smoke Sensor	As per requirement	2
13	Fibre connectors	As per requirement	5
14	LAN connectors	As per requirement	15

Classroom Aids:

The aids required to conduct sessions in the classroom are:

Laptop, white board, marker, projector, first aid, FAS and sensors, Fire safety gadgets and accessories, Software

Annexure: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	AKGEC	Prof. Som Ashutosh	General Manager	AKGEC SKILLS FOUNDATION , AKG Engineering College Campus, 27th Milestone, Delhi-Meerut Expressway, Adhyatmik Nagar, Ghaziabad-201009	91 - 7669094516	ashutoshsom@akgec.ac.in	
2	BLUE STAR	Jagdish Sharma	H.R	Tamil nadu Smart and Advanced Manufacturing Centre, C block, Tidel Park, Taramani, Chennai	9650074838	jagdishsharma@bluestarindia.com	
3	Broadline	Natesh C	Manager R&D		044 28333083	nateshc@broadline.co.in	
4	Eagle star ventures	Kamal Babu Singh	Director		9326453055 /8758910185	kamababusingh@gmail.com	
5	EPLAN	Mukund Kulkarni	Head Education	EPLAN Software Pvt Ltd 5th Floor, Brigade Triumph, Dasarahalli Main Road, Sector B Hebbal	9004002823	Kulkarni.m@eplan.in	

				Kempapura, Bengaluru - 560092.			
6	G D Goenka Industry validation	Mr. Vipul Pandey	AGM		9149057199	Vipul.pandey@gdgu.org	
7	INDOTECH_Industry Validation						
8	Industry Validation_Philips Machine Tools	Puneet Kumar Saini	Sales Engineer		8851525264	puneet.k@phillipscorp.com	
9	Janatics_Validation	R Ramesh	Executive Director		91 9629032777	didactic@janatics.co.in	
10	JLab_Industry Validation	Ravi Jain	Director				
11	JPRL	Tushar Agarwal	Operations Manager		8299303473	operations@jpri.in	
12	JSS	Khushbu Jain	Proprietor		0171-2642492	sales@jaincolab.com	
13	Kore_	Chaitanya. R. Doshi	Director		8884822483	chaitanya.r.doshi@gmail.com	
14	MBI	Aruna Achal	General Manager	Gurugram Chandigarh		enquiry@mindbrinno.com	

15	Mevachi	Divya Khurana	Head Business & Strategy		9718166848	info@mevachi.com	
16	Micromatic	KUNDAN KUMAR	Asst. Manager - Learning & Development		8744919163	Kundan.kumar@micromaticgrinding.com	
17	S.K.Engg Works_						
18	Scilab_Industry Validation	Navneet Jain	Director				
19	Servilink Industry Validation	Pratik Patel	Business Development Manager		70690 49716	servitech.ssl@servilinksystems.com	
20	TANSAM	Sukhpreet Singh	CEO		04469255700		
21	VARMAIC Industrial Validation	Mr. Dinesh Varma	Director		9235663734	mail.dv@varmaic.in	

Annexure: Training Details

Training Projections:

Year	Estimated Training of Total Candidates	Estimated training # of Women	Estimated training # of People with Disability
2025-26	500	50	
2026-27	1500	150	
2027-28	1000	100	

Data to be provided year-wise for next 3 years.

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline: Online Ratio
1	☐ Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐ Imparting Soft Skills, Life Skills and Employability Skills /Mentorship to Learners		
3	☐ Showing Practical Demonstrations to the learners		
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐ Tutorials/ Assignments/ Drill/ Practice		
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐ On the Job Training (OJT)/ Project Work Internship		

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
 - Videos of Trainees during OJT

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities based on their main economic function, product, service or technology.