

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

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Name and contact details of individual dealing with the submission

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Position in the organisation	Technical officer
Address if different from above	NA
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List of documents submitted in support of the Qualifications File

1. Annexure I: Detailed Curriculum
2. Annexure II : Industry Validation
3. Annexure III : Placement Record
4. Annexure IV : Administrative Approval (Attached at Annexure 3)

QUALIFICATION FILE SUMMARY

Qualification Title	Diploma in Installation & Repair of Consumer Electronics Products			
Qualification Code	NL/S/L4/C007 NIELIT/ES/L4/007			
Body/bodies which will assess candidates	Examination Cell, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi. 110003.			
Body/bodies which will award the certificate for the qualification.	Certification Division, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi. 110003.			
Body which will accredit providers to offer the qualification.	Accreditation Division, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi. 110003.			
Occupation(s) to which the qualification gives access	Support Technician for Multi-National and National Desktop PCs Manufacturers Can Work In Call Centre for After Sale Support - can be also absorbed in Local Markets Can start their own Small Scale business and can be self employed			
Proposed level of the qualification in the NSQF.	4			
Notional Learning Hours	350 hours.			
Entry requirements / recommendations.	ITI or 12th pass			
Progression from the qualification.	Technician ➔ Service Engineer ➔ Service manager Technician ➔ Self Entrepreneur			
Planned arrangements for RPL.	Yes. The RPL will be carried out through screening, identifying the skill gaps, provide bridge training to cover the competency gap & then conduct final assessments of the candidates			
	Formal structure of the qualification			
Module Code	Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
DCEP-01	LCD-LED TV and Monitor	Mandatory	100	4

DCEP-02	Cable TV and DTH Services	Mandatory	90	
DCEP-03	VCD-DVD Player and Home Theatre System	Mandatory	70	
DCEP-04	FM Radio- Cordless Phone-Hair Dryer	Mandatory	35	
DCEP-05	Induction Stove and Microwave Oven	Mandatory	40	
DCEP-06	Enhancing Communication Skill	Mandatory	15	

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack. Nil

SECTION 1 **ASSESSMENT**

Name of assessment body:

Examination Cell

National Institute of Electronics and Information Technology
6-CGO Complex, Electronics Niketan,
Lodhi Road, New Delhi. 110003.

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

Yes. The RPL will be carried out through screening, identifying the skill gaps, provide bridge training to cover the competency gap & then conduct final assessments of the candidates.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

The emphasis is on practical demonstration of skills & knowledge based on the performance criteria. Each OUTCOME is assessed & marked separately. Student is required to pass in all OUTCOMES individually and marks are allotted. Following assessment methodologies are used.

- A. Written Assessment (Multiple Choice Questions)
- B. Practical Assessment
- C. Viva Voce Assessment

Supporting evidences for Assessment

The assessment results are backed by following evidences.

- 1 The assessor collects a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In charge / Head of the Training Centre.
- 2 The assessor verifies the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same is mentioned in the attendance sheet.
- 3 The assessor assigns roll number.
- 4 The assessor takes photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.

Please attach any documents giving further information about assessment and/or RPL.

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification on page 1.

Job Role	Support Technician for Multi-National and National Desktop PCs manufacturers Can Work In Call Centre for After Sale Support - can be also absorbed in Local Markets Can start their own Small Scale business and can be self employed
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Title of Unit/Component:

Assessable Outcomes	Assessment criteria for the outcome	Total Mark	Written	Practical	Vivo-voce
1: Use of Tools and testing equipments to repair/service LCD-LED TV and Monitor.	Installation and demonstration of LCD-LED TV. Use and functionality of all features/ Operation of LCD-LED TV and Monitor. Use of repairing tools and testing equipments like multimeter, function Generator etc.	30	10	8	2
	Identifying correct software version/modules in the product and ascertain correct and complete porting/update of software in the Product Operate Product testing equipment. Fault Diagnosis & Connect Product's PCB to PC/test equipment for diagnostics. Repair/replace part if needed using right tool.		10		
		Total	20	8	2
2: Implementation/maintenance of Cable TV and DTH Services.	Connection & Implementation of Cable TV and DTH Services	30	10	8	2
	Diagnosis Faults and rectify the same		10		
		Total	20	8	2
3: Use and functionality of all features of VCD-DVD Player and Home Theatre System	Demonstration & Installation of VCD-DVD Player and Home Theatre System. Use & functionality of all features/ operation of VCD-DVD Player and Home Theatre System.	30	10	8	2

	Safely dismantle/assemble Product using the right tools. Servicing of Product. Assess & analyse fault and take appropriate action like replacement of any part or card.		10		
		Total	20	8	2
4: Servicing and repair FM Radio Cordless Phone-Hair Dryer	Demonstration and access all features of FM Radio, Cordless Phone & Hair Dryer	30	10	8	2
	Servicing of FM Radio, Cordless Phone & Hair Dryer, Diagnose faults using step by step procedure and take appropriate action like replacement of part etc using right tool.		10		
		Total	20	8	2
5: Installation, Servicing & repair Induction Stove and Microwave Oven	Demonstration, installation and Operation of Induction Stove and Microwave Oven. Use and access of all features/Operation of Induction Stove and Microwave Oven.	30	10	8	2
	Servicing of these equipments. Identify faults following standard procedure and rectify it.		10		
		Total	20	8	2
6: Enhancing Communication Skills	Interpret operating manual of the equipment. Interpret safety manual.	50			10
	Record customer query and provide appropriate solution.				20
	Communicate with customer and supervisor clearly. Fill up record/work book clearly, concisely and accurately .				20
		Total			50
	Grand Total	200	100	40	60

Means of assessment 1

Proctored online assessments (LAN and Web based), carried out using a variety of question formats applicable for linear / adaptive methodologies; performance criteria being assessed via

situation judgement tests, simulations, code writing, psychometrics and multiple choice questions etc.

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

India is expected to become the fifth largest consumer durables market in the world by 2025. The consumer electronics market is expected to increase to US\$ 400 billion by 2020. The production is expected to reach US\$ 104 billion by 2016.

The sector is expected to double at 14.7 per cent compound annual growth rate (CAGR) to US\$ 12.5 billion in FY15 from US\$ 6.3 billion in FY10. Urban markets account for the major share (65 per cent) of total revenues in the consumer durables sector in the country. Demand in urban markets is expected to increase for non-essential products such as LED TVs, laptops, split ACs and, beauty and wellness products. In rural markets, durables like refrigerators as well as consumer electronic goods are likely to witness growing demand in the coming years as the government plans to invest significantly in rural electrification.

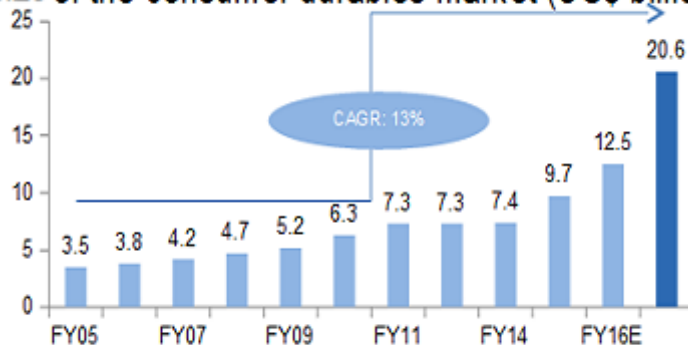
The Government of India has increased liberalisation which has favoured foreign direct investments (FDI). Also, policies such as National Electronics Mission and digitisation of television and setting up of Electronic Hardware Technology Parks (EHTPs) is expected to boost the growth of this sector.

The consumer durables market is anticipated to expand at a CAGR of 14.8 per cent to US\$ 12.5 billion in FY15. Also, the demand from rural and semi-urban areas is projected to expand at a CAGR of 25 per cent to US\$ 6.4 billion in FY15, with rural and semi-urban markets likely contributing majorly to consumer durables sales.

Consumer durables revenues have been growing at a healthy pace

- The consumer durables sector revenues reached US\$ 9.7 billion in FY15 and is expected to reach US\$ 12.5 billion in FY16
- Consumer durable market expected to grow at CAGR of 13 per cent from FY05 to FY20
- Around two third of the total revenue is generated from urban population and rest is generated from rural population
- Samsung has emerged as the market leader in the consumer durable segment followed by the Indian giant Videocon

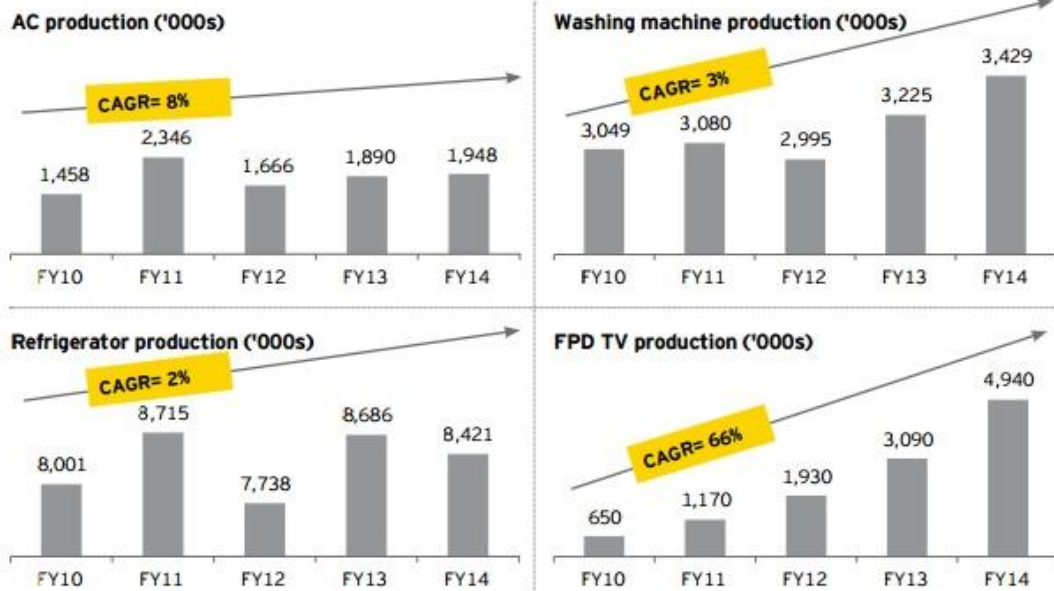
Size of the consumer durables market (US\$ billion)



Source: Electronic Industries Association of India,
CAGR – Compound Annual Growth Rate, E: Estimated F: Forecasted

Link: <http://www.ibef.org/industry/indian-consumer-market.aspx>

With growing demand, domestic production has also been on a rise...



The qualification is approved under scheme for financial assistance for skill development in electronics System Design and Manufacturing(ESDM) sector of latter dated 01/11/2013 of Ministry of communication and Information Technology Department of electronics and Information Technology

Letter of Approval is Attached Annexure-3

The Department of Electronics and IT has formulated the National Policy on Electronics 2012 which aims at transforming India into a premier ESDM hub. The objective of the policy include creation of an eco-system for a globally competitive Electronic System Design and Manufacturing sector in the country to achieve a turnover of USD 400 billion by 2020 and employ 27.8 million(approx.) persons at various levels by 2020. To create a policy framework for creating a conducive ecosystem for promoting investment in ESDM sector in the country several initiatives are being taken up. The instant scheme is one such initiative which aims at facilitating creation of an eco-system of Skill Development in ESDM sector in the country to meet the emerging requirements of skilled human resource in this sector. There is no overlap of this scheme with any other project/scheme.

The National Skill Development Policy which targets skilling of 500 million persons by 2022 has set a target for the Department to skill 10 million persons by 2022 in the domain of Electronics & ICT.

The Department has also formulated a National Policy on Electronics (NPE 2012) with a vision to create a globally competitive electronics design and manufacturing industry to meet the country's needs and serve the international market. The objectives of the Policy include significantly enhancing the availability of skilled Manpower in the ESDM sector.

The employment in the Electronics industry is estimated to grow phenomenally. As per estimates projected by a study conducted by National Skill Development Corporation (NSDC) in the year 2009, this sector's employment figures of about 0.9 million in the year 2008 is estimated to increase by 3.2 million by 2022. Now, the NPE 2012

envisages employment for about 28 million at various levels. The Electronics Manufacturing sector has a lot of potential for large-scale employment of ITI graduates, Diploma holders, etc. Further, semi-skilled persons with appropriate training can also be employed/made readily employable.

However, the present education/skill development system at both formal as well as non-formal level is not vibrant enough to meet the emerging requirement of the ESDM sector. Hence, it is essential for the Government to intervene and create an Enabling environment for increasing the numbers of skill providers (both in public and private domain) to address the emerging human resource requirements for ESDM sector.

Keeping the above in view, it is proposed to launch a scheme for facilitating skill development in ESDM sector focussing on students/school drop-outs at 9-10th Standard onwards, ITI, Diploma, Non-engineering graduates, unemployed youth, etc. (in-line with NVEQF) to increase their employability to work in manufacturing and Service support functions.

A copy of the Scheme is attached Annexure-4

What is the estimated uptake of this qualification and what is the basis of this estimate?

30 students / Batch – 3 Batches /Year

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

Online access of Qualification Register is not yet available.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The Qualification is to be monitored and reviewed every two years.

The following data will be used

1. Results of assessments
2. Employer feedback will be sought post-placement
3. Student feedbacks

Please attach any documents giving further information about any of the topics above.

NIL

SECTION 3
SUMMARY EVIDENCE OF LEVEL

Level of qualification: 4

Summary of Direct Evidence:

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

Generic NOS is/are linked to the overall authority attached to the job role.

Process required	Professional knowledge	Professional skill	Core skill	Responsibility	Level
The individual needs to know and understand Consumer Electronics Product Equipment operating Skills, Consumer Electronics Product repairing skills, Consumer Electronics Product Component Handling skills, Consumer Electronics Product Software Skills, Consumer Electronics Product Troubleshooting Skills	The individual on the job needs to know and understand Knowledge of spare management and repair & return process for faulty components Protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used First aid requirements in case of electrical shocks, cuts and other common injuries Functionality and features/working of Consumer Electronics Products Consumer	The individual on the job needs to know and understand Consumer Electronics Product Equipment operating Skills Use and access all features and applications Consumer Electronics Product Operate Consumer Electronics Product testing equipment’s Connect Consumer Electronics Product’s PCB to PC/test equipment for diagnostics Consumer Electronics Product repairing skills Undertake fault diagnostic Interpret test results to identify and localize faults Utilize appropriate mechanisms and tools to rectify the faults	The individual on the job needs to know and understand how to Read and understand technical manuals, work orders and reports Read and understand Consumer Electronics Product safety instructions Fill up record sheets clearly, concisely and accurately as per company procedures Clearly communicate relevant information to supervisors Respond appropriately to queries Prioritize and execute tasks in a high-pressure environment Use and maintain resources	After successful competition of this course, participant will be acquainted with the necessary Hardware and Software skills for Installation, Repair, Maintenance and Trouble shooting of Consumer Electronics Product. Participants will be a “Ready to Observe” product for Consumer Electronics Product manufacturing sector.	4

	<p>Electronics Products specific Console Control and user interface Functionality of hardware components of Consumer Electronics Products Procedure to dismantle and assemble Consumer Electronics Products Range of tools and testing equipment (multi meters, frequency generators etc) available and their functionality ESD hazards and their effect on electronic components Standard fault-finding (troubleshooting) techniques Basic computer knowledge to be able to run diagnostic tools Functionality of hardware components, software applications, screen, touchpad etc. Consumer Electronics Products software related problems and their possible solutions</p>	<p>Utilize appropriate communication channels to escalate unresolved problems Test Consumer Electronics Product to confirm and resolve of the reported fault Undertake corrective repairs by software porting/updates Undertake checks to confirm that the problem is resolved Consumer Electronics Product Component Handling skills Safely dismantle/assemble Consumer Electronics Product using the right tools Safe remove/replace components using right tools Compliance to ESD protection measures Consumer Electronics Product Software Skills Identifying correct software version/modules Ascertain correct and complete porting/update of software in the Consumer Electronics Product Consumer Electronics Product Troubleshooting Skills How to approach a defect Make</p>	<p>efficiently and effectively Analytical Skills Analyse (and understand) Manufacturing Process based on Company need Interpret reports, readings and numerical data Keep up to date with new technology and performance issues Other Skills Create and maintain effective working relationships and team environment through collaboration Take initiatives and progressively assume increased responsibilities Share knowledge with other team members and colleagues</p>		
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	Standard repairing process	use of standard OEM specified troubleshooting steps Interpret intermediate results and progress fault rectification accordingly			
4	4	4	4	4	

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

This qualification has comprises both technical and analytic skills and can be linked to any qualification higher than this one, existing or to come.

The qualification is approved under scheme for financial assistance for skill development in electronics System Design and Manufacturing(ESDM) sector of latter dated 01/11/2013 of Ministry of communication and Information Technology Department of electronics and Information Technology

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

NA

SECTION 5

EVIDENCE OF INTERNATIONAL COMPARABILITY

List any comparisons which have been established.

NIL