



SKILL PLAN

of

Department of Telecommunications

Skill Development Group
Department of Telecommunications
Ministry of Communications
Sanchar Bhawan, 20, Ashok Road, New Delhi
www.dot.gov.in

Contents

Background note on preparation of Skill Plan	2
Identify:.....	3
Make in India :.....	3
Digital India :	3
Swachha Bharat:	4
Smart Cities :	4
Analyse:	8
Execute:	11
a) Through DoT PSU Training Centers.....	11
b) Through TSSC	12
Annexure A : List of training Centres in BSNL	13
Annexure – B : List of ESDM Job Roles.....	17

Background note on preparation of Skill Plan

- The cabinet Secretariat has desired Ministry of Skill Development and Entrepreneurship (MSDE) to prepare the national skill plan which would be derived from skill plans of different Ministries
- Secretary MSDE in his D.O. No B-12018/04/2015-SDE/834 dated 18th May 2016 to Secretary (T) has communicated that each Ministry including Telecom must make sincere efforts to prepare the skill plan which should include existing skill gaps and the incremental manpower requirements for the sector till 2022.
- Hon'able Minister of Skill Development and Entrepreneurship in his D.O. No B-12018/04/2015-SDE/2810 dated 18th May 2016 has also stressed the need of skill plan for Telecom Sector. He has also stated that though his ministry has initiated the environmental scan to assess the skill gap yet stressed to give utmost priority for assessing and firming up the skill requirements pertaining to Telecom Ministry. The process is to be done in 3 phases: Identify, analyze and execute



Identify:

To identify the skill gaps and quantitative requirements of skilled manpower after duly considering flagship schemes of Government of India like Make in India, Smart cities, Digital India, SwachhaBharat etc.

In an attempt to identify skill gaps and quantitative requirements of skilled manpower keeping due consideration to flagship schemes of Government of India, MSDE has conducted environmental scan for all major sectors including telecom through KPMG. The report has been delivered to stakeholders recently. It includes the impact of different flagship schemes announced by Government of India with respect to parameters which were considered in its 2013 skill gap report. The impact of flagship schemes of the Govt of as contained in Environmental Scan report of MSDE is detailed below :

Make in India:

Manufacturing of Telecom Equipments:The Make in India initiative has triggered investments in telecom sector in a big way. Manufacturers such as Foxconn, Micromax, Oppo, etc. intend to invest a sum of around \$6 billion. India has already surpassed the 100 million units –a promising sign that India will soon become a mobile manufacturing hub for the world. To promote large scale manufacturing and assembling of handsets in the country to achieve production of 500 million units by 2019, the Department of Electronics and Information Technology (Deity) has even formed a Fast Track Task Force (FTTF)

In order to ensure availability of adequate skilled manpower for manufacturing sector, Telecom Sector Skill Council has developed training courses for manufacturing sector and has already trained 60,248 candidates in the present year in manufacturing roles.

Digital India:

The government intends to provide broadband connectivity to 2.5 lakh gram panchayats (GP) in a phased manner by 2019 and is funded by Universal Service Obligation Fund (USOF). Thus, to fulfil its endeavour to increase digital penetration across rural areas, the government has taken up the BharatNet also known as the National Optical Fibre Network project. This endeavor will open up avenues for better access for service providers such as telecom operators, cable TV operators,

ecommerce companies, etc. to launch new services and in turn aid creation of local employment opportunities. Additionally, for the GPs to take advantage of this project, WiFi-enablement will be necessary. Hence, the need to train resources within the villages to manage and service these Wi-Fi's arises.

An estimate places the number of people that need to be trained at 12.5 lakh.

The scheme can help telecom operators expand their internet penetration. Even, the employability of manpower is going to increase by making people digitally literate because now they can participate in technology related jobs such as mobile enabled banking, healthcare, etc. within their villages. It is expected that by 2019, digital inclusion to target job creation for approximately 1.7 crore people, trained in IT, telecom and electronics.

Lastly, one of the pillars of the digital India drive is that telecom service providers are expected to train 500,000 people in 5 years to create rural workforce to cater to their own needs. Thus, both the government and telecom sector are jointly participating in upskilling of manpower through aforementioned measures

Swachha Bharat:

Roughly 18.5 lakh metric tonnes of electronic waste each year is being generated with telecom equipments alone accounting for 12% of the e-waste. Under clean India Mission., it is required that all e-wastes are suitably disposed off. This will give rise to new job roles and up skilling within e-waste disposal and collection, as the current workforce may not have the desired skills.

Smart Cities :

The Smart Cities Mission is to be implemented as a centrally sponsored scheme with central government providing financial support to the extent of approximately \$7.2 billion over 5 years. Telecom service providers are set to form the backbone and will be vital to the sustainability of the cities. All the infrastructure within the city will be embedded with sensors that will deploy telecom links to talk to each other –smart sensors will automatically transmit information about water leakages, electrical faults, car collision etc. to the concerned person or department to take necessary action.

On the employment front, it is estimated that about 16 lakh jobs across all sectors would be added by 2020 because of Make in India and Smart cities. We can attribute about 15-20% of these jobs to be created by the telecom sector.

The environmental scan report of MSDE through KPMG for Telecom Sector has broadly identified the man power requirements tabled below :

Estimated human resource requirement (nos. in million)

Sub Sectors	Baseline - 2013	2013 Study		2016 Study	
		2017	2022	2017	2022
Service providers	0.62	0.83	1.19	0.84	1.39
Infrastructure providers	0.10	0.11	0.13	0.14	0.52
Network and IT vendors	0.45	0.57	0.77	0.59	0.99
Telecommunications equipment manufacturers	0.45	0.54	0.64	0.58	1.38
Retail and distribution	0.46	0.80	1.44	0.76	1.39
Total	2.08	2.85	4.16	2.91	5.67

Source KPMG in India Analysis

The study on skill gap requirements has also been done by TSSC and ICA for mobile handset industry.

The assessment of TSSC is tabled below :

TSSC Assessment	TSSC projections for 2016	TSSC projection for 2021	Additional Telecom Manpower requirement
Telecom Manpower in all subsectors	12,20,000	88,60,000	76,40,000

The assessment of ICA (Indian Cellular Association) on mobile handset industry is tabled below :

SEGMENTS	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	2020 - 21	2021 - 22
MOBILE HANDSETS, HANDSET COMPONENTS & ACCESSORIES' MANUFACTURING	90,000	2,00,000	3,50,000	6,90,000	10,50,000	14,00,000	17,00,000
(A) TECHNICIANS	38,000	42,500	48,900	55,800	64,100	71,700	75,000
(B) FRONT DESK / CUSTOMER INTERACTION / CUSTOMER CARE	15,000	18,700	24,300	31,600	35,200	37,100	40,000
(A) IN SHOP EXECUTIVE	4,50,000	4,86,000	5,10,000	5,30,000	5,70,000	6,15,000	6,50,000
(B) IN SHOP PROMOTERS	90,000	1,08,000	1,29,600	1,45,000	1,60,000	1,80,000	2,00,000
(C) MERCHANDIZERS	7,000	9,800	12,000	15,000	18,000	21,500	25,000
(A) SALES	1,50,000	1,65,000	1,80,000	2,10,000	2,40,000	2,65,000	3,00,000
(B) BACK OFFICE & ADMINISTRATION	50,000	57,500	65,000	75,000	85,000	95,000	1,00,000
CUSTOMER CARE AGENTS / CALL CENTRE EXECUTIVES	5,000	7,000	9,000	11,500	14,000	18,000	20,000
TOTAL	8,95,000	10,94,500	13,28,800	17,63,900	22,36,300	27,03,300	31,10,000
Incremental Manpower requirements		1,99,500	2,34,300	4,35,100	4,72,400	4,67,000	4,06,700

Total incremental manpower requirement for mobile handset industry in the period 2015-16 till 2021-22 : 22,15,000

2016 Environmental Scan report of MSDE has been conducted by KPMG on the base-line parameters of its 2013 skill gap report, meaning thereby that the scan report of 2016 has considered only the parameters which are considered in 2013. It is worth mentioning that in 2013 mobile handset industry was in primitive stage with most of the handsets being imported. In the last few years there has been dramatic change in mobile handset segment both in terms of features of the phone and manufacturing status. Also with the passage of time, the demand for smart phones has increased tremendously and there is significant jump in the manufacturing of indigenous mobile handsets.

The KPMG report of 2013 thus does not feature the manpower requirements of mobile handset industry and therefore the scan report of 2016 too does not account for mobile handset manufacturing sector. Also the TSSC study which was done in 2015, doesn't contain mobile handset skill requirements projections adequately.

Thus considering all sub-sectors in telecom domain, the estimated human resource requirements for the sector will be as detailed below :

Sl no.	Telecom subsector	Telecom manpower		Total additional Requirement
		2016-2017	2021-2022	
1	Service Providers	8,40,000	13,90,000	5,50,000
2	Infra Providers	1,40,000	5,20,000	3,80,000
3	N/W & IT providers	5,90,000	9,90,000	4,00,000
4	Telecom Equipment manufacturers	5,80,000	13,80,000	8,00,000
5	Retail & Distribution	7,60,000	13,90,000	6,30,000
6	Mobile Handsets	10,94,500	31,10,000	20,15,500
	Total	40,04,500	87,80,000	47,75,500

Thus total additional requirement of Telecom skilled manpower in all subsectors of telecom Industry from the period 2016-2017 till 2021-2022 will be 47,75,500

Analyse:

In accordance with the identification carried out above, in Telecom Sector there is the need to create additional skilled manpower to the tune of 47,75,500 till the end of financial year 2021-22 from the present strength of 40,04,500, meaning thereby an increase of 119.25% over the present strength in a period of five financial years. This is an enormous task wherein all stakeholders shall have to contribute their vital role in accomplishing the goal in a timely manner such that at no point of time there is any shortage of telecom skilled resource to the Telecom Industry to ensure the smooth growth of the sector at large.

As per the experience a telecom organization employs 20-25% graduates in different streams such as engineering, finance, MBA etc. The graduate category of employees in Telecom Sector can be termed as High End Employments. The balance employment in any telecom organization comprises of suitably telecom skilled manpower, skilled precisely to the job needs with basic qualification of diploma/ITI/Apprenticeships/ school dropout etc and such job roles can be termed as Low End Employments.

The past practice of the telecom sector has been that no specific telecom skill training is delivered for high end job roles, the graduation in engineering, finance, MBA etc. is considered as sufficient qualification and skilling.

However with rapid and continuous advancement of technology in telecom sector, skilling would also be essential for high end job roles. Thus though at present no skill trainings are being conducted for graduates for high end job roles, it is proposed to create orientation modules of 150 – 200 hours for graduates of different streams to make them specifically suitable for a telecom subsector suiting organizational needs. To achieve this, TSSC shall have to develop training modules for all graduate streams suiting entire cross section of telecom subsectors.

For low end job roles, specific job-role oriented skill trainings are required for different subsectors in telecom space and TSSC has developed a good number of training modules which are NSQF compliant for various telecom subsectors. The subsector wise training modules developed by TSSC so far are detailed below :

	Subsectors	Job Roles
1	Service Providers	Customer care executive (Call Centre)
		Customer care executive (Relationship centre)
		Field sales executive
		Sales executive (Broadband)
		Territory Sales manager (Prepaid)
		Territory Sales manager (Broadband)
		Broadband Technician
2	Infra Providers	Tower technician
		Cluster-in-Charge
		Cluster manager
		RF Site Surveyor
		Telecom Tower/Bay Installation Supervisor
3	Network & IT Providers	Optical Fibre Technician
		Optical Fibre Splicer
		Field Maintenance Engineer
		Infrastructure Engineer
		BSS Support Engineer
		Transmission Engineer
		Core Engineer
		Fault Management Engineer
		Product Specialist Engineer
		Installation Engineer-SDH & DWDM
		Installation Engineer- L2 & L3
		Network management Engineer
		ICT Technician
		ICT Engineer
		Grass Root Telecom Provider
		Telecom Network Security Technician
Network Engineer		
4	Telecom Equipment manufacturers	ESDM courses as given in Annexure - B
5	Retail and Distribution	Distributor sales Representative
		In-store Promoter
		Customer care executive (Repair Centre)
		Handset Repair Engineer (Level II)
		Telecom Terminal equipment application developer (Android)
		Telecom Terminal equipment application developer (Native)
		E-waste Collector
		Telecom Board Bring up Engineer
		Telecom Embedded Hardware Developer
6	Mobile Handset manufacturing	ESDM courses as given in Annexure - B

The flagship schemes like Make in India, Smart Cities, Digital India need many specialized skills like planning and design, Network security, communication skills etc. In addition to job roles listed

above for different subsectors in telecom sector, TSSC shall also have to develop following dominant job roles for the growth of the sector :

	Subsectors	Additional Job Roles
1	Service Providers	Switch Room maintenance expert(All new Tech like 3G, 4G)
		Telecom Accounting Expert
		Telecom Billing Software Executive/ Engineer
		Radio spectrum Planning & Monitoring executive/ Engineer
		Telecom Converge Billing executive / Engineer
		Transmission Planning & Maintenance executive/ Engineer
		Telecom executive with other sectoral exposure like Banking, Health, Transportation, Education etc
		Telecom Fraud Management Executive & Regulatory Compliance Executive/ Engineer
2	Infra Providers	Smart City Utilities Planning executive / Engineer
		Smart City Utilities Maintenance executive / Engineer
		Smart City Network Operation executive / Engineer
		Smart City Transmission Network executive / Engineer
		Radio spectrum Planning & Monitoring executive / Engineer
		IBS Solution executive / Engineer
3	Network & IT Providers	Network Security executive
		Network Operation Control Centre Maintenance executive
		Smart City Network Operation executive
		Managed Services
		Analytics and Forensic
		Telecom Management
		Design and RF Engineering
4	Telecom Equipment manufacturers	Telecom Equipment Design & Development executive / Engineer
		Telecom Standards Development executive / Engineer
		Transmission Equipment Design & Development executive
		Wireless Telecom Network Design & Development executive / Engineer
		Broadband Equipment Design & Development executive / Engineer
		Wi- Fi Technician
5	Retail and Distribution	Telecom Support Service executive/ Engineer
6	Mobile Handset manufacturing	System Design executive /Engineer
		Mobile Handset Hardware executive/ Engineer
		Mobile Handset Software Development executive/ Engineer
		Mobile Handset Hardware Test executive/ Engineer
		Mobile Handset Software Test executive/ Engineer
		Product Development, testing & Validation Expert
		Calibration and testing engineer

In addition to above job roles, communication skill development shall have to be the part of each job role since it has been experienced that even very bright candidates lack expression qualities. Besides above listed job roles, TSSC would also have to develop job roles suiting future technological advancements.

Execute:

Thus as per the skill gap study report of various agencies put together after an objective assessment, it is observed that the total telecom sector manpower shall grow from 4.00 million in 2016-17 to 8.78 million in 2021-22 creating additional requirement of 4.78 million (say 4.8 million approx.) in a period of five years.

As per the analysis of TSSC (Telecom Sector Skill Council), a telecom setup has invariably 20-25% high end skilled people comprising of engineers, MBAs, CAs, HR experts etc. These high-end skilled people are directly recruited by Telecom Organizations through campus placements/ lateral entries in various positions in upper pyramid. These high-end skilled people as per the industry practice are given orientation courses within the recruiting organization for 2-4 weeks and then they are placed on work positions. Higher the position, the lesser is the duration of the orientation program.

Thus factually speaking the high-end manpower is not required to undergo any specialized skilling module since they are considered adequately skilled. However, it would be most prudent if TSSC develops short term skilling modules for high-end employees also so that there is no need of orientation program at employer's end after their recruitment.

The balance manpower comprising of 75-80% (say 80 % for skilling needs) would require skill trainings in job roles listed above. Keeping the optimistic figure of 80%, the skilling required till 2021-22 will be 3.84 million.

Essentially this 3.84 million comprises of lower end pyramid of a typical Telecom Organization and would primarily comprise of school dropouts, ITIs, diploma holders etc

The roadmap to telecom skilled manpower of 3.84 M in five years ending 2021-22 is presented below :

- a) **Through DoT PSU Training Centers:** DoT has 4 major PSUs namely BSNL, MTNL, ITI and TCIL. BSNL has 29 training centers (details placed at Annexure A) spread across the

length and breadth of the nation having fully furnished infra and hostel facilities at majority of places.

MTNL has two training centers CETTM (Centre for Excellence in Telecom Technology and Management) MTNL, Mumbai and ITTM (Institute of Telecom Technology and Management), MTNL, Delhi. ITI (Indian Telephone Industries) has a training centre in Bangalore and a 'Centre of Excellence' is being created exclusively for skill development activities. Although TCIL has no training centre of its own, for skill needs, it conducts skill development programs in schools and institutions.

In addition, TSSC has signed a tripartite MOU between BSNL/MTNL/TSSC/TP under which BSNL/MTNL will handover specific training facilities within their campuses to TSSC for operationalizing them as Telecom Skill Development Centres, in tune with decisions arrived at during meeting of Hon'able Minister of Communications and Hon'able Minister of MSDE.

- b) **Through TSSC:** TSSC (Telecom Sector Skill Council) has presence in 34 states and has 479 training partners by July 2016 which are continuously on rise, comprising of 2100 training centers. It has the capacity to train 08 lakh candidates per year subject to support from MSDE.

The proposed plan to create 3.84 million telecom skilled manpower with the DoT PSUs and TSSC is tabled below :

Sno	Organization	2017-18	2018-19	2019-20	2020-21	2021-22	Total
1.	BSNL	88,000	97,000	1,07,000	1,20,000	1,30,000	5,42,000
2.	MTNL	5,500	6,000	6,700	7,500	8,500	34,200
3.	TCIL	18,700	21,000	23,000	25,000	27,500	1,15,200
4.	ITI	2,600	2,800	3,000	3,500	4,000	15,900
5.	TSSC	4,00,000	5,00,000	6,50,000	7,50,000	8,50,000	31,50,000
	Total	5,14,800	6,26,800	7,89,700	9,06,000	10,20,000	38,57,300

Thus the above proposed skilling plan will generate telecom skilled manpower to the tune of 3.86 million in a period of five years starting from 2017-2018 to 2021-2022 in a phased manner as detailed above. The success of the above plan will largely depend on the support of MSDE to TSSC in allocating candidates and the funds for creating Telecom Skilled Manpower.

Annexure A : List of training Centres in BSNL

List of Training Centres in BSNL					
Sl. No	Name of BSNL Training Centre	Infrastructure/ capabilities	No. of Class Rooms	Hostel Capacity	Remarks
1	ALTTC, GZB	Advance level trainings in NGN, Mobile Technology, OFC, BB, IT & Networking. In Skill development trainings, ALTTC has equipments/ facilities in Product Specialist Engineer, Installation Engineer-L2 & L3	13*	Senior Hostel:- 1 hostel-94 seats Junior Hostel:- 2 hostels-350 seats	* Excluding labs
2	BRBRAITT, Jabalpur	OFC, OFS, MLLN, SDH, NGSDH, DWDM, MPLS-VPN, Sattelite, CDMA, 2G, 3G, CDOT MAX-XL, CDOT MAXNG, OCB, NGN Class 4,5, SSTP, BB &Multiplay, ISP, Computer Lab 1,2	16	356 Non AC, 78 AC	
3	NATFM, HYD	One Computer Lab with 30 PCs	4	72x2=144	
4	ARTTC, Ranchi	CDOT, Battery PP, Transmission Lab, OFC, CDMA 2000 1X, BB, Networking lab	6	150(Non AC)	
5	RGMTTC, CHNI	Computer Lab, ISP, GSM, CDMA, CorDECT, CDOT MBM, CDOT ANRAX, PP, MPLS, MLLN, E-Studio, BB, Multiplay, PRODUCT & SERVICE LAB, MW/DIG UHF Lab, PDH/ SDH, DLC, Documentation Network, OFC, AV, IPv6, FTTH, DWDM, Mobile Servicing Lab	8 class rooms + 4computer labs+4 Lab class rooms Total=16	CV Raman Hostel, AC Rooms=12, Non AC =13, Ramanujam Hostel=40, Rani Laxmibai Hostel=23	Individual Room: AC Rooms=19, Non AC Rooms=16 Share Accomodation (4 in a room) Gents=192 Ladies=90

6	RTTC, Ahmedabad	OFC, MLLN, Networking, Computer, GSM, WiFi, BB, Product & Service Lab, CDOT, UG Cable Lab	4	56	Residential quarters have been converted to hostel blocks with 56 beds. No hostel facility is available for female participants
7	RTTC, Bhub.	BB, OF, Battery & PP	8	98 (Non AC)	
8	RTTC, CHNI	Computer Lab-1,2,3, CDOT, AXE, BB & Multiplay, TXM	4	160 Beds	nil
9	RTTC, GUW	Computer Lab-1,2, CDOT, OFC, OFS, L&C, BB, PP, MLLN, DSPT, Electronics LAB	5	70 Trainees (non-AC)	
10	RTTC, HYD	OF, SDH, PDH, CDOT, Networking Lab, Computer Lab 1,2	7	30 trainees (AC), 170 trainees (Non AC)	For demo of other eqpt. Field visits are arranged
11	RTTC, Jaipur	Computer lab-1,2, CDOT, BB, MLLN, Transmission, IPv6	6	16 Trainees (AC), 274 Trainees (non-AC)	
12	NSCBTTC, Kalyani	EWSD, CDOT 256 RAX, Computer & Networking, BB, OFC, IPv6, PDH, SDH, NGSDH, Battery, SMPS, MLLN, ERP-2 NO	7	170 seats (Double bedded)	Items mentioned in infra are functional
		GSM Nortel, CDMA 2000 1X EVDO, CDOT SBM, OCB ROU, M/W Lab	nil	48 seats (doble bedded)	Items mentioned in infra are non functional
13	RTTC, Lucknow	ERP, Computer, OFC, OFS, Microwave, MLLN	3	100 (NON AC)	
14	RTTC, Mysore	CDOT 256 Lab, CDOT SBM Lab, CDOT MBM, Conference Hall capacity 80, Lab, BB, MLLN, NGSDH, PDH/ SDH, OFC, Network, computer, GSM Auditorium, High Tech class room 5 capacity 300	11	280	

15	RTTC, Nagpur	CDOT Lab, SDH Lab, OFC Lab, MLLN Lab, V-SAT Lab, Tariff Lab, ERP Labs, BB Lab, BTY & PP	5 Classrooms, 1 Exam Hall	OH-70 Exe., BBH-60 Non Exe	
16	RTTC, Pune	6 Labs: Computer Lab I, II, OFC, MLLN, CDOT, CDR, SDH	6	42 Rooms having triple occupancy	1 class room & 20 hostel rooms booked by MH Govt. Some rooms also used for inservice courses
17	RTTC, Rajpura	SDH, Transmission, GSM. Switching (CDOT), NIB, Broadband	9	270 Trainees (non AC)	
18	RTTC, Trivandrum	OF/ SDH, 3G, OCB, CDOT, Network Lab, BB, Cables	11	8 (AC), Total Capacity Non AC-345	
19	CTTC, Indore	OFC, Transmission lab, CDOT, BB, Computer, FTTH, GSM, UG	6	24 (Non AC)	
20	CTTC, Jammu	Computer Lab, (Non working systems viz CDOT AnRAX-2, Battery bank-1, Float Rectifier-1, UPS-1, Switching Cubicle-1, MDF-1,2/34 Mbps. Optimux-2, 2/8 Mbps MUX with OLTE-2)	2	nil	nil
21	CTTC, KOL Salt Lake	SDH, Transmission, GSM. Switching (CDOT), NIB, Broadband	4	124 seats (boys), 12 seats (girls)	
22	CTTC, Kurukshetra	AV Hall=13, Computer Lab, Switching Lab (CDOT SBM), Library=1, Office Rooms=4, Store=1		Hostel capacity 4 at CTTC KKR for girls	No separate campus for CTTC KKR but situated at some portion of 1st & 2nd floor of Telephone Exchange Building Kurukshetra
23	CTTC, LW	No separate infra available			
24	CTTC, Merrut	01 Computer Lab	2	3 rooms with twin sharing basis	

25	CTTC, Nasik	CDOT, Cable, OFT, Computer, Audio Visual	6	100 (non AC)	
26	CTTC, Patna	Line & Cable lab	2 rooms with capacity 50 each, 1 room with capacity 15 persons	nil	In old RTTC bldg, For demo take to exchange& project office in same campus. Only 1 SDE avl.
27	CTTC, Sundernagar	Computer & Switching Lab	2	42 (non AC)	
28	DTTC, Bangalore	CDOT SBM Lab, Computer Labs (2)		2	nil
29	DTTC, Chni	L&C Lab, Computer Lab 1,2	2	nil	nil

Annexure – B : List of ESDM Job Roles

S.No.	Courses	Course Code	Course Level	KIA	Industry Vertical	Eligibility	Sector	Duration
1	Telecom Test Technician	TL/M/L2/C008	L1-L2	TSSC	Telecom Electronics	a) ITI - Electronics, Electrical, Instrumentation, b) Diploma – Electronics, Electrical, Instrumentation c) Vocational Education Training (Final year candidate pursuing in ITI/Diploma)	Manufacturing	200
2	Telecom Installation and repair worker	TL/S/L2/C011	L1-L2	TSSC	Passive Infra	8th	Service	200
3	Optical Fiber Splicer	TL/S/L3/C001	L3	TSSC	Telecom	10th pass	Service	350
4	Board Bring Up Engineer	TL/M/L3/C009	L3	TSSC	Telecom Electronics	10th, Undergoing ITI, Electronic/ Electrical/ Mechanical(including final year candidates)	Manufacturing	350
5	Telecom Industry Network Security Technician	TL/S/L3/C012	L3	TSSC	Telecom Industry Engineer	ITI/ Diploma	Service	350
6	Through Hole Assembly Operator	TL/M/L3/C029	L3	TSSC	PCB Assembly	10th + ITI or 12th pass	Manufacturing	350
7	Telecom Rigger	TL/S/L3/C074	L3	TSSC	Passive Infra	10 Pass	Service	310
8	Tower Technician	TL/S/L4/C002	L4	TSSC	Telecom	10+2 and/or ITI Diploma in Electrical/ Mechanical including final year candidates	Service	350
9	Handset repair Engineer (Level II)	TL/S/L4/C003	L4	TSSC	Telecom	10+2 / ITI (including final year candidates)	Service	350
10	Broadband Technician	TL/S/L4/C004	L4	TSSC	Telecom	10+2	Service	350
11	Optical Fiber Technician	TL/S/L4/C005	L4	TSSC	Telecom	10+2	Service	350
12	Telecom Embedded Hardware Developer	TL/M/L4/C010	L4	TSSC	Telecom Electronics	Diploma (including final year candidate)	Manufacturing	350
13	Electrical testing of telecom assemblies	TL/M/L4/C013	L4	TSSC	Telecom Manufacturing	ITI / Diploma (electronics) or BSc.(Electronics)	Manufacturing	350
14	Grass Root telecom Provider	TL/S/L4/C014	L4	TSSC	Network Management	10th + ITI, 12th pass	Service	350
15	IPC acceptability criteria of Telecom PCB assemblies	TL/M/L4/C015	L4	TSSC	Telecom Manufacturing	ITI/ Diploma(electronic) or BSc.(electronics)	Manufacturing	350
16	SMT process for telecom boards	TL/M/L4/C016	L4	TSSC	Telecom Manufacturing	ITI / Diploma (electronics) or BSc.(Electronics)	Manufacturing	350
17	Soldering of telecom board assemblies	TL/M/L4/C017	L4	TSSC	Telecom Manufacturing	ITI / Diploma (electronics) or BSc.(Electronics)	Manufacturing	350
18	Telecom tower equipment installer and integrator	TL/S/L4/C018	L4	TSSC	Passive Infra	10+2/ITI	Service	350
19	Telecom industry network specialist	TL/S/L4/C019	L4	TSSC	Network Operation Maint	ITI/ Diploma	Service	370
20	Tele-health Technician	TL/S/L4/C020	L4	TSSC	Medical Electronics	10th +ITI /Diploma (Electronics, Instrumentation, Biomedical	Service	350
21	Telecom Quality Technician	TL/M/L4/C021	L4	TSSC	Telecom Manufacturing	ITI / Diploma (Electrical, electronics, Instrumentation)	Manufacturing	350

22	Pick and Place Assembly Operator	TL/S/L4/C026	L4	TSSC	PCB Assembly	12th Pass	Service	350
23	RF Site Surveyor	TL/S/L4/C075	L4	TSSC	Passive Infra	Preferably 10+2	Service	330
24	Installation Engineer SDH & DWDM	TL/S/L5/C006	L5	TSSC	Telecom	Diploma(including final year candidate)	Service	400
25	Installation Engineer Networking Layer two & Layer three	TL/S/L5/C007	L5	TSSC	Telecom	Diploma (including final year candidate)	Service	400
26	Embedded System Design using -Bit Microcontroller	TL/M/L5/C037	L5	TSSC	Embedded System VLSI	Diploma	Manufacturing	400
27	Line Repair Technician	TL/M/L5/C039	L5	TSSC	Telecom Manufacturing	12th Pass + Certified in Line Assembler L4 course.	Manufacturing	630

**Skill Development Group
Department of Telecommunications
Ministry of Communications
Sanchar Bhawan, 20, Ashok Road
New Delhi -110001
www.dot.gov.in**