PROJECT- Senior Management Positions/Management Positions (ProjectCode-C-01) Position→ One Position for each Work Area Code

WORK	Work Area	SKILL SET	Experience
AREA			
C-0101	Post of Registrar	The incumbent should be a highly competent Management Professional, possessing exceptional inter-personal and communication skills, for C-DOT's top management post of the REGISTRAR, who along with his full-time management responsibilities, also works with Project Board, Steering Committee and the Governing Council of the Centre. PROFILE OF THE REGISTRAR • The REGISTRAR of C-DOT who acts as ex-officio Secretary to the Project Board, the Steering Committee and the Governing Council is also responsible for various functions of the Centre including Personnel, Administration and Employee Services related to the working of professionals, health and welfare services, maintenance of the premises and the properties of the Centre, legal & contractual, RTI matters, implementation of Official Language(HINDI). He shall be directly reporting to Executive Director, C-DOT who is the chairman of C-DOT Board. QUALIFICATIONS AND EXPERIENCE • The applicant should be a Graduate in any discipline, preferable with Two Years, full time Professional Post Graduate qualification in Management from a reputed institute (with First Division) and at least 15 years of post-qualification professional experience in the areas mentioned above. Experience at	Minimum 15 years

middle / senior level administrative posts in reputed Government/PSU, R&D, Academic Institutes, other institutes, private sector will be preferred.

- The applicant should be highly competent, people-focused motivating individual with Experience in the tasks and duties listed in the paragraph dealing with the "Profile of the Registrar".
- Applicants employed in the Central/ State Government Departments/ Undertakings/ Autonomous Bodies should be presently drawing pay in Level 13 of 7CPC of ₹123100-215900 or analogous scale with 2 years of experience. These officers can apply on deputation or absorption basis.

AGE

Not exceeding 50 Years as on 01.01.2022 (for internal candidates not exceeding 53 years)

PAY SCALE, PERQUISITES & BENEFITS

• The post carries salary at the Government of India, Level 13A of 7CPC of ₹131100-216600. Besides this, the position carries allowances like central DA, HRA and benefits like medical reimbursement, subsidy for purchase of house/ conveyance, official transport, reimbursement of membership of professional bodies, Contributory Provident Fund, LTC, telephone facility, Gratuity etc. as per C-DOT rules, as applicable from time to time.

	<u> </u>		
		The Chief Finance Officer is the head of the Finance function in C-DOT. The primary responsibility of the Chief Finance Officer will be relating to Finance and Accounts of the Centre and he is responsible for maintenance and upkeep of Accounts	
		Profile of Chief Finance Officer	
			Minimum 15 years
C-0102	Post of CFO	 The Chief Finance Officer will direct all finance-related strategies, initiatives and activities for C-DOT. The CFO is also responsible for managing the funds of the Centre and Provident Fund, Gratuity Fund etc The Chief Finance Officer prepares the Annual Budget, Supplementary Budget Estimates for the Executive Director for submission to the Board and is responsible for the banking operations of the Centre and for the maintenance of Annual Accounts etc. as per the directive of Comptroller and Auditor-General of India. He shall be directly reporting to Executive Director, C-DOT who is the chairman of C-DOT Board. Designs and coordinates a wide variety of accounting and statistical data and reports Monitoring and review of finance policies, procedures and practices in line with legal requirement. Ensuring the timely completion and submission of financial and statistical reporting for management and regulatory agencies Informing and advising senior management on the organization's financial condition. Working with senior management in setting annual financial goals 	

- and targets for organization.
- Tracking, reporting and managing the overall financial performance.
- Any other assignment as given by higher authorities from time to time

QUALIFICATIONS AND EXPERIENCE

- The incumbent should be a highly competent Finance Professional, possessing exceptional interpersonal and communication skills, for C-DOT's top management post of the Chief Finance Officer.
- The applicant should have at least Two Year's, full time MBA in Finance or ICWA/CA from a reputed institute and at least 15 years of post-qualification, professional experience in the areas mentioned above.
- Applicants employed in the Central/ State Government Departments/ Undertakings/ Autonomous Bodies should be presently drawing pay in Level 13 of 7CPC of ₹123100-215900 or analogous scale with 2 years of experience. These officers can apply on deputation or absorption basis.

AGE

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		as per C-DOT rules, as applicable from time to time.	
		to time.	
		The incumbent is responsible for	Minimum 10 years
		coordinating the communications output	willimmum to years
		within C-DOT. Creates and delivers	
		emails, direct mail, brochures,	
		newsletters, interfacing with external	
		agencies and other publications. Good	
		communication, presentation, writing,	
		organizing, creative skills, as required to	
		draft several documents, follow-up mails	
		etc. Good grasping and convincing	
		power. Good knowledge and	
		understanding of C-DOT products and telecom technologies in general. Self-	
		motivated and outgoing. Ability to	
		organize marketing events, product	
		demonstrations and promotional shows.	
		Basic Knowledge of MS tools like Excel,	
		Power point etc	
		Profile of Sr. Manager/Manager	
		(Corporate Communications)	
	Post of		
	Sr.Manager/	Create C-DOT literature and	
C-0103	Manager	other forms of communication.Create marketing and	
	(Corporate	• Create marketing and promotional materials, both print	
	Communications)	and electronic.	
		• Copyedit, proofread, and revise	
		communications.	
		• Design and launch email	
		marketing campaigns.	
		Recommend, implement and	
		maintain site design and	
		operation.Work with business units to	
		determine event budget and	
		manage expenses to that budget.	
		 Promote products and services 	
		through public relations	
		initiatives, social media, Press	
		release etc.	
		Develop marketing	
		communications campaigns.	
		Create thought leadership	
		materials.	
		 Create and deliver press releases, media relations content, case 	
		media relations content, case	

- studies, white papers, executive bios, corporate newsletter content, social media content, and speaking proposals.
- Identify, develop and execute communications strategy for key media contacts and customer references.
- Research media coverage and industry trends.
- Develop fresh story ideas.
- Conduct extensive media outreach manage social media campaign
- Prepare briefing materials, Manage Pre-Sales activity with Marketing Team.
- Coordinate scheduling and logistics.
- Coordinate conference, trade shows, and press interviews.
- Manage information.
- Prepare agendas and conduct research.
- To interact with product TLs/GLs and also with customers in regular meeting/follow-ups/negotiations.

QUALIFICATIONS AND EXPERIENCE

• The applicant should be a Graduate in any discipline and MBA in any discipline from a reputed institution. Experience of minimum 10 years in a reputed Advertising Agency, Sales function, Print, Radio, Electronic Media, Social Media.

AGE

Not exceeding 45 Years as on 01.01.2022 (for internal candidates not exceeding 48 years)

Work	Work Area	SKILL SET	Experience
Area Code			
		The Post of Sr. Manager/ Manager (Start Up Operations) requires that the candidate should have worked with start up companies (preferable). Should have taken the start up's to the next level. Should be capable of setting up the business from scratch. Profile of Sr. Manager/Manager (Start Up Operations)	Minimum 2 years
C-0104	Post of Sr.Manager/ Manager (Start Up Operations)	 Identify suitable startups for aligning with C-DOT'S R&D work Start incubation center in C-DOT Onboarding of startups Arrange funding for startups from C-DOT/External sources Design workflows for contest launch, solution submission andautomated model scoring and leader board Handhold Startups to scale up their idea, innovation Prepare a strategic plan for start up center and individual startups Prepare market strategy for startups Design and test business storyline QUALIFICATIONS AND EXPERIENCE Graduate from premier institute (IITs/IIMs/NIT) .Preferably MBA from reputed institute. Should have worked with start up eco system for a Minimum of 2 years. 	

	Ago	
	Age Not exceeding 45 Years as on	
	01.01.2022 (for internal candidates not exceeding 48 years)	
	exceeding 46 years)	
C-0105 Sr. Re	The post of Sr. Manager/Manager (Human Resource Development) requires a candidate to be well versed with HR policies and practices. Knowledge of rules relating to Performance Management System. Knowledge of DOPT rules, Promotion rules, government norms on reservation policy. Good drafting, presentation, interpersonal communication & managerial skills. Good liaison experience with campuses for recruitment, HR consulting companies and manpower outsourcing vendors, etc. Good working knowledge of ERP practices. Profile of Sr. Manager/Manager (Human Resource Development) Research, preparation & proposing amendments in the existing policies for organization improvement and its employees. Ensure smooth functioning of existing Performance appraisal system in-line with Organization's goals & objectives through ERP. Co-ordinate regular Grade Promotions as per existing policy. Coordinate and conduct Responsibility Promotions as per organization requirement. Campus recruitment and induct contractual manpower. Co-ordinate and induct contractual manpower through outsourcing agencies. Handling Grievance/disciplinary related matters and redressal. Regular, routine activities related to HR functions — employee satisfaction survey, etc. ERP implementation of HR functions & practices.	Minimum 10 years

people CMMI/ RTIs & Audits. QUALIFICATIONS AND EXPERIENCE	
The applicant should be an MBA(HR/OB) from a reputed institution. Minimum experience of 10 years in HR. Age Not exceeding 45 Years as 01.01.2022 (for internal candidates not exceeding 48 years)	

PROJECT – Radio Access Network (Project Code-T-01) & 5G RAN (Project Code-T-02) Positions (approx.)-50

WORK AREACODE	WORK AREA	SKILL SET	Experience/Qualifications
T-01	Leadership Position Covering aspects of RAN	 Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing Wireless network system architecture and subsystem design 2G/3G/4G/5G Protocol understanding Requirements development/managemen t Process, System Engineering Aspects, Testing and debugging tools, Signal generator/analyzers, Logic Analyzers Configuration Management, Scripting, Build and Development environment Able to work on Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc Comfortable with organization processes Interface with other teams and other organizations Support for Field Trials and Testing Lab building, maintenance C/C++ programming 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

T-0101	Baseband HW	Computer Architecture, Digital Logic, Processor/FPGA/SoC interfacing	
		Expertise in hardware design (Circuit Design and Analysis, PCB, Devices, Signal and	
		power integrity, interface with CAD/VDG/EPG) • Testing and debugging tools, Signal generator/analyzers,	
		Logic AnalyzersKnowledge of industry standards, standardization	
		• Good understanding of 3GPP wireless standards	
T-0102	RRH Analog & RF Hardware	 Computer Architecture, Digital Logic, Processor/FPGA/SoC interfacing Expertise in hardware design (Circuit Design and Analysis, PCB, Devices, Signal and power integrity, interface with CAD/VDG/EPG) Ability to learn and use RF analysis and design tools Testing and debugging tools, Signal generator/analyzers, Logic Analyzers 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
		 Knowledge of industry standards, standardization Good understanding of 3GPP wireless standards 	
T-0103	RRH Signal Processing in FPGA	Computer Architecture, Digital Logic, Processor/FPGA/SoC interfacing	

		 Knowledge in hardware design (Circuit Design and Analysis, PCB, Devices, Signal and power integrity, interface with CAD/VDG/EPG) Expertise in FPGA Development – Tools for FPGA development, Timing analysis, Languages (VHDL/Verilog), Simulation, Modeling, Programming Matlab and Simulink and equivalent tools Ability to learn and use RF analysis and design tools Testing and debugging tools, Signal generator/analyzers, Logic Analyzers SDR concepts, Waveforms, Digital Filters, Interfacing with IP from other vendors. Knowledge of industry standards, standardization 	
T-0104	OS and Board Support Package	 Good understanding of 3GPP wireless standards System Engineering Aspects, Testing and debugging tools, Signal generator/analyzers, Logic Analyzers Configuration Management, Scripting, Build and Development environment Able to work with Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

		 Processors, Devices, SoCs, FPGA, on-board devices and interface devices. Operating Systems, distributions, packaging, devices, kernels, device drivers, data plane development, uboot, compilation, linking, loading C/C++ programming skills along with scripting. Power-on self test.
T-0105	Physical Layer/Layer-1 Development	 Knowledge of LTE / UMTS / WCDMA / HSDPA / 5G or WLAN standards in the physical layer and future developments within 3GPP, OFDM, MIMO Testing and debugging tools Experience with handling of specific test equipment (signal generator, signal analyser, logic analyser and pattern generator) is beneficial Expertise in FPGA Development – Tools for FPGA development, Timing analysis, Languages (VHDL/Verilog), Simulation, Modeling, Programming Matlab and Simulink and equivalent tools DSP Programming skillset preferred C/C++ programming skills along with scripting. Unix Network Programming Data Structures and

T-0106	LTE Layer- 2/Layer- 3/RRM	 Algorithms Good understanding of 3GPP wireless standards Testing and debugging tools Configuration Management, Scripting, Build and Development environment Able to work with Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc C/C++ programming skills along with 	Minimum 2 years in Research and Development
		scripting. Unix Network Programming Data Structures and Algorithms Design Patterns Familiarity with Protocol Stack Development Good understanding of 3GPP wireless standards	B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
T-0107	System Management (OAM/FCAPS)	 Testing and debugging tools Configuration Management, Scripting, Build and Development environment Able to work with Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc C/C++ programming skills along with scripting. Unix Network Programming Data Structures and Algorithms 	

		 Design Patterns Familiarity with Protocol Stack Development Embedded Database based systems (mySQL, PostgreSQL) System level understanding of network element. Good understanding of 3GPP wireless standards 	
T-0108	Self Organising Network	 Testing and debugging tools Configuration Management, Scripting, Build and Development environment Able to work with Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc C/C++ programming skills along with scripting. Unix Network Programming Data Structures and Algorithms Design Patterns Familiarity with Protocol Stack Development Good understanding of 3GPP wireless standards 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/ /PhD (in relevant areas)
T-0109	Element Management System (EMS)	 Testing and debugging tools Configuration Management, Scripting, Build and Development environment Able to work with Product integration and testing like functional testing, load testing, Stability testing, Regression testing etc 	

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		 C/C++ programming skills along with scripting. Unix Network Programming Data Structures and Algorithms JAVA Language Web Developement (JSP,JavaScript,AJAX, HTML,Application Server, Web Server Database (Knowledge of Oracle or MySql orPostgres) ORM Framework Framework (Sping Boot, Structs, BOOTSTRAP) 	
T-0110	Cabinet Power and Accessories	 Computer Architecture, Digital Logic, Processor/FPGA/SoC interfacing Expertise in hardware design (Circuit Design and Analysis, PCB, Devices, Signal and power integrity, interface with CAD/VDG/EPG) Testing and debugging tools, Signal generator/analyzers, Logic Analyzers Knowledge of industry standards, standardization Systems engineering, thermal engineering, batteries, power aspects. Antennas Good understanding of 3GPP wireless standards 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/ /PhD (in relevant areas)
Т-02	Leadership Position Covering aspects of 5G-RAN	Experience in Wireless product development, system/sub-system design and architecting. Product Integration especially in the domain of 4G/5G RAN. • Good understanding of	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

		3GPP standards for 4G/5G, Open RAN architecture, O-RAN alliance specifications and protocols. • Working knowledge of physical layer and higher layers of eNodeB/gNodeB including open RAN interfaces. • Experience in Wireless conformance testing and evaluation for eNodeB/gNodeB using industry standard test equipment. • Working Knowledge of design tools like Matlab/ADS/FPGA tool and knowledge of generic server hardware, Linux OS, Accelerator and Network Interface cards. • Working knowledge in System Engineering, Radio link calculations and RAN synchronization procedures. • Possess leadership skills to manage team of engineers and interface with other teams. Familiarity with project planning, monitoring and configuration management.	
T-0201	(5G-RAN Software Development and Testing)	 Proficient in the C/C++ language, Data Structures, Algorithms, Linux, multi-threaded system and scripting Good understanding of 3GPP, O-RAN and SCF specifications of 4G / 5G and RAN architecture, 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)

- protocols, and procedures
- Experience in software development, system design and architecting of protocol stacks and interfaces.
- In-depth knowledge of RAN software development for mobile networks, especially on 3GPP LTE and NR. Working experience 4G/5G of Layer-2/Layer-3 software design and development.
- Experience in development of RAN Intelligent Controller (RIC) and RIC interfaces.
- Hands-on experience
 in Software
 integration and
 debugging issues.
 Experience in
 debugging tools like
 Wireshark, gdb etc
- Experience in Open stack, DevOps CI/CD, Cloud, Kubernetes, Pods, Dockers will be an add on.
- Experience with working on 5G test tools such as UE Simulators, Core Network Simulators
- Experience with working in cloud native environment, experience with test and automation tools.
- Shall be able to develop, enhance

		software protocols, interfaces and management software modules. • Good understanding of IP networking • Analyze system logs, test tool logs and use this information for debugging issues and identifying accurate root causes for the problems seen on the system under test or in the network.	
T-0202	(5G-RAN RF Unit development and Testing)	 Good understanding of 3GPP standards and O-RAN specifications of 4G / 5G and RAN architecture, protocols and procedures. Working Knowledge of design tools like ADS/AWR essential. Experience in Wireless conformance testing using industry standard test equipment will have added advantage. 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
T-0203	(5G-RAN Baseband-DU Physical Layer)	 Good understanding of 3GPP standards and O-RAN specifications of 4G / 5G and RAN architecture, protocols and procedures. Experience in 4G/5G physical layer development and testing Working knowledge of FAPI and nFAPI 	

		for L1 & L2 interface, and working knowledge of Openhaul 7-2x interface. • Proficient in C and C++ Knowledge and MATLAB • Experience in 4G/5G eNB/gNB testing with UE simulators,VSG and VSA	
T-0204	(5G-RAN Baseband-DU HW)	 Good understanding of 3GPP standards and O-RAN specifications of 4G / 5G and RAN architecture, protocols and procedures. Experience in 4G/5G eNB/gNB testing with UE simulators, VSG and VSA. Experience in programming in VHDL/Verilog for FPGA based designs and FPGA SOCs. Working Knowledge in high speed interfaces like PCIe & eCPRI and Knowledge of TCP/UDP. Hands on experience for porting and running L1 on generic server. Experience in Linux OS, Real time kernels, DPDK and multi core programming in generic server 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

		hardware.	
		 Working Experience in PCIe accelerator cards and Network interface cards(NIC). Experience in implementing IEEE 1588 PTP on server 	
T-0205	(5G-RAN Openhaul interface and Lower Physical layer development and Testing)	 Good understanding of 3GPP standards and O-RAN specifications of 4G / 5G and RAN architecture, protocols and procedures. Knowledge of O-RAN front-haul interface specification (ORAN-WG4) Experience in 4G/5G physical layer development and testing Working Knowledge of simulation tools such as MATLAB and Digital signal Processing. Working experience of OFDMA, MIMO, Beamforming, FFT/IFFT, Channel Estimation, channel equalizer and Carrier Aggregation implementation Knowledge of NETCONF, SSH, TCP/IP, eCPRI, PTP and SyncE protocols Working experience of FPGA based design and development 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

PROJECT – ITU COMMON ALERTING PROTOCOL (Project Code-T-03)

Positions (approx.) - 20

WORK	WORK AREA	SKILL SET	Experience/
AREA CODE			Qualifications
T-03	Leadership Position Covering aspects of ITU-Common Alerting Protocol	 Experience in building scalable, distributed, complex enterprise software systems that have been successfully delivered to customers. Experience in contributing to the architecture and design (architecture, design patterns, reliability and scaling) of new and current systems Experience in driving large projects from concept to prototype to production. Experience working with databases, data processing, and perceptive tools. Good understanding of common security threats and vulnerabilities and expertise to resolve and design secure software systems. Knowledge of Big data Applications such as Kafka, MongoDB, Hadoop etc. is preferred. Exposure to Machine Learning/Deep Learning projects and Knowledge of commonly used ML packages and libraries with MLOps concepts Experience in administration and troubleshooting for DevOps/Deployment, Orchestration 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/ B.E (CS/EC)/ M.Tech(CS/EC)/ M.E.(CS/EC) /PhD (in relevant areas)

		• Experience in software	Minimum 2 years
	Software Solution	design, development including	in Research and
	Architecting and	delivering highly available	Development
	Development	services, excellent problem	•
T-0301	•	solving and system design skills	D. T. 1 (GG/TG) /
		 Experienced in design, problem 	B.Tech(CS/EC)/
		solving, experience with MVC	B.E (CS/EC)/
		and coding skills with a strong	M.Tech(CS/EC)/
		bias for quality and object-	M.E.(CS/EC)
		oriented languages like- JAVA	/PhD (in relevant
		and Python	areas)
		• Should have experience in	
		contributing to the architecture	
		and design (architecture, design	
		patterns, reliability and scaling)	
		of new and current systems	
		 Work through all phases of the 	
		project lifecycle, including	
		reviewing requirements,	
		designing QA and support	
		services for the new technology	
		platform, building new test	
		tools, developing test code	
		 Experienced in Agile or Scrum 	
		software development	
		methodologies, microservices	
		and influencing software	
		engineering best practices	
		within the team	
		Driving the design and delivery	
		of selected product features	
		including collaborating with	
		stakeholders on architecture,	
		design/user experience, product	
		structure and pricing strategy,	
		and supportability	
		• Proficiency in <i>HTML</i> ,	
		Javascript (frameworks like-	
		Angular, React, Vue), CSS	
		(libraries like- <i>Bootstrap</i> ,	
		Foundation, Materialize)	
		Good knowledge of distributed	
		technologies for mobile	
	1		<u> </u>

T-0302	Cloud Technologies and Micro service Implementation	applications with real-time systems of high throughput, low latency, and highly scalable Deep knowledge of distributed SOA architecture and design patterns Engaging with customers to understand their requirements, pain points, and develop features and solutions to address their needs Coding experience with automated testing frameworks, tools, and services Experience in administration and troubleshooting for DevOps/Deployment, Orchestration Management Experience managing full application stacks from the OS up through custom applications Deploying application into cloud using CICD(Continuous Integration and Continuous Deployment) process using docker, jenkins and kubernetes Writing automation scripts to automate cloud deployment Professional experience in architecting/deploying/operating applications on cloud Experience in migration of conventional applications to the cloud Advanced experience with System Administration with Linux (Ubuntu, CentOS, RedHat)	Minimum 2 years in Research and Development B.Tech(CS/EC)/ B.E (CS/EC)/ M.Tech(CS/EC) /M.E.(CS/EC) /PhD (in relevant areas)
T- 0303	Software Security and Network	• Experience in web application security, secure application	Minimum 2 years in Research and

Security	design and architecture, threat	Development
	modeling, secure coding, and	
	cryptography	B.Tech(CS/EC)
	Deep technical understanding of OWASP Top 10 and CWE Top	B.E (CS/EC)/
	OWASP Top 10 and CWE Top 25 vulnerabilities	M.Tech(CS/EC
	Evaluating the impact of current	M.E.(CS/EC)
	security trends, and advisories	/PhD (in relevan
	and continuously updating the	areas)
	knowledge and skill set with	
	rapidly changing threat	
	landscape	
	• Good understanding of common	
	security threats and	
	vulnerabilities	
	Ability to work with developers to madely the governity issues.	
	to resolve the security issuesExperience in code reviews,	
	vulnerability detection, and root	
	cause analysis	
	• Experience in exploiting bugs	
	and bypassing security	
	mitigations in Operating	
	Systems	
	• Knowledge for use of IP	
	protocol packets debugging	
	tools as Wireshark, tcpdump,	
	ping, traceroute, nmap, hping etc.	
	 Knowledge of IDS/IPS 	
	(Intrusion Detection	
	System/Intrusion Prevention	
	System) monitoring and	
	experience using at least one	
	major SIEM system	
	• Need a combination of	
	troubleshooting, technical and	
	communication skills	
	Should have strong sense of overeship urganay and drive	
	ownership, urgency and driveCertifications in the security	
	• Certifications in the security	

domain like CEH are preferred

	Deep Learning and	Demonstrated proficiency in data extraction, analysis and	Minimum 2 years in Research and
T- 0304	Natural Language	data extraction, analysis and scripting tools	Development Development
	Processing	• Experienced knowledge in	1
		Python with training and	B.Tech(CS/EC)/
		deploying machine learning	B.E (CS/EC)/
		models, using open source tools	
		and libraries, such as: SciKit,	M.Tech(CS/EC)/ M.E.(CS/EC)
		TensorFlow, Pytorch etc. • Knowledge and Experience in	/PhD (in relevant
		developing linguistic annotation	areas)
		projects like Text to Speech and	
		language conversion suitable for	
		Indian Vernacular languages	
		Should have ability to analyze	
		large datasets with text and image data, perform data	
		visualizations, develop	
		hypotheses, and make insightful	
		recommendations	
		• Exposure to Machine	
		Learning/Deep Learning	
		projects and Knowledge of	
		commonly used ML packages	
		and libraries with MLOps concepts	
		• Knowledge of Big data	
		Applications such as Kafka,	
		MongoDB, Hadoop etc. is preferred.	
		• Should have good	
		communication and	
		interpersonal skills	
		Experience in developing GIS	Minimum 2 years
		mapping applications and using	in Research and
	Geospatial Solution	geoprocessing tools	Development
T-0305	Development and	• Experience using and working	
	Image Processing	with imagery, mapping, and geospatial data and GIS location	B.Tech(CS/EC)
		based software applications like	/B.E (CS/EC)/
		tracking, route identification etc.	M.Tech(CS/EC)/
		Advanced level knowledge of	M.E.(CS/EC)
		Geoserver and GIS Data	/PhD (in relevant

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Management Tools like QGIS,	areas)
MapInfo, ESRI ArcGIS and	
expertise in Openlayers5	
• Experience on implementing	
various Map and directional	
APIs with expertise in open	
source GIS map server and GIS	
software development	
• Expert level knowledge of	
Geodatabases and experience in	
design, and development of	
geospatial data models and geo-	
intelligent algorithms	
• Should have good	
communication and	
interpersonal skills	

PROJECT- Network Security (Project Code-04)

Positions (approx.) - 10

WORK AREA CODE	Work Area	SKILL SET	Experience/ Qualifications
T-0401	Leadership Position in Field deployment, O&M support	 Preferably person should have cybersecurity-related certification (e.g. Ethical hacking, Network forensic, Computer forensic etc.) course Knowledge of shell scripting, Python scripting, Linux (CentOS/Ubuntu), Windows OS Knowledge of TCP/IP Protocol, Routing Protocol as BGP, IPFIX protocol, DNS, DHCP, HTTP, HTTPs, SIP etc. Knowledge for use of IP protocol packets debugging tools as Wireshark, tcpdump, ping, traceroute, nmap, hping etc. Preferably knowledge of ICT device configuration like Router, Switches, PC, Servers etc. Write effective documentation using MS Office & Open Office tools for Doc, XLS and PPT etc. Knowledge of Big data Applications as Kafka, Spark, ELK stack, MongoDB, Hadoop etc. 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
T-0402	FPGA Programming	 Experience in FPGA software technology, from low-level hardware description languages like Verilog to high-level programming options like C, C++, and open computing language (OpenCL) Knowledge of Xilinx FPGA cards, and tools like Vitis and Vivado for application development on FPGA Good knowledge of Linux operating systems 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)

- Coding knowledge of C, C++, shell scripting, Python scripting
- Knowledge of TCP/IP Protocol, Routing Protocol as BGP, IPFIX protocol, DNS, DHCP, HTTP, HTTPs, SIP etc.
- Knowledge of IP packet debugging tools such as Wireshark, tcpdump, ping, traceroute, nmap, hping etc.
- Good knowledge of packet capture, packet striping, packet de-duplication, compression & decompression, encryption & decryption etc. to be implemented in FPGA Selected candidates will be responsible to work on FPGA hardware and development tools to accelerate various functions of an application and to offload the CPU

PROJECT- 4G/5G CORE (Project Code-T05)

Positions (approx.)- 50

WORK AREA CODE	Work Area	SKILL SET	Experience/ Qualifications
T-05	Leadership Positions (Domain Experts) Covering aspects of 4G/5G Core and AI/ML/Analytics	 Shall have experience in development of 4G/5G network functions and CI/CD, Shall have experience in algorithms, data sets and neural networks and concurrent/parallel programming Shall have experience Design and development of communication networks analytics Shall have experience in architecting products, leading products development and delivery and in managing large teams 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
0501	4G/5G Technology Development	 Shall have experience on Mobile Technologies (4G/5G) Shall have experience of protocol software development Shall have experience of large database-oriented application development Shall have good expertise in development of Internet Protocol based applications Shall have good knowledge of networking concepts 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)

- Should have experience in developing software utilizing various coding languages including C/C++, golang, rust, java, web technologies etc.
- Should have experience in analyzing code for weaknesses and errors, and on how to improve them.
- Should have experience in Data Analytics Software
- Should have experience in developing customized code for multiple projects simultaneously
- Should have experience in developing secure software systems based upon industry specifications
- Should have experience in software design using large data sets
- Should have experience in using cybersecurity
- Should have experience in using open source technology
- Should have experience of Management Interface development
- Should have experience working on large-scale software projects
- Should have good knowledge of CI/CD
- Should have worked cloud based software development
- Should possess eagerness to explore

		and learn new technologies Should possess outstanding teamwork spirit, collaboration and communication skills Preference would be given for candidates having knowledge of 4G/5G protocols Preference would be given to candidates having containers / virtual machine-based application development experience.	
0502	AI/ML/Analytics	 Shall have expertise in Mathematical Software, Linear Programming, Linear Algebra and Optimization, AI, ML and Analytics Shall have experience in developing mathematical software, parallel programming, multi-processing and high-performance computing Should have experience of large database-oriented application development Should have experience in developing software utilizing various coding languages including C/C++, golang, rust, java, web technologies etc. Should have experience in analyzing code for weaknesses and errors, and on how to improve 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

	them.
	Should have experience
	in Data Analytics
	Software
	Should have experience
	in developing
	customized code for
	multiple projects
	simultaneously
	Should have experience
	in software design using
	large data sets
	Should have experience
	in using open source
	technology
	Should have experience
	working on large-scale
	software projects
	Should have good
	knowledge of CI/CD
	Should possess
	eagerness to explore
	and learn new
	technologies
	Should possess
	outstanding teamwork
	spirit, collaboration and
	communication skills

PROJECT- QUANTUM COMMUNICATION (Project Code-06)

Positions (approx.)- 05

WORK AREA CODE	Work Area	SKILL SET	Experience/ Qualifications
0601	Leadership Position Covering aspects of Quantum Mechanics	 Strong Theoretical Background in Quantum Communications Expertise in analysing QKD Protocols (& security proofs for the same) and support teams implementing the same Practical QKD implementation experience desirable Good understanding of various types of attack strategies on different QKD protocol implementations Should have thorough knowledge of Quantum Mechanics in general and all 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)

products desirable Strong digital design concepts as well as knowledge of Linux operating system Coding knowledge of C, C++, shell scripting, Python scripting Knowledge of Ethernet & other telecom protocols, error correction, privacy amplification, synchronization etc. Experience in handling lab instruments for debugging e.g. Mixed Signal Oscilloscope, signal generators etc. Experience in FPGA Timing closure Experience working with SoC based systems and knowledge of protocols such as SPI, UART, I2C, USB. Strong documentation and		 aspects related to Quantum Communications in particular Strong documentation and presentation skills; must be proficient in relevant software tools used in the same Experience in FPGA design, from low-level hardware description languages like Verilog/VHDL to high-level programming options like C, C++, and open computing language (OpenCL) Knowledge of Xilinx FPGA cards, and tools like Vivado for application development on FPGA, IP Core development and integration Experience of working on Optical Communication 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC) M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
presentation skills; must be proficient in relevant software tools used in the same	1 0602	 Strong digital design concepts as well as knowledge of Linux operating system Coding knowledge of C, C++, shell scripting, Python scripting Knowledge of Ethernet & other telecom protocols, error correction, privacy amplification, synchronization etc. Experience in handling lab instruments for debugging e.g. Mixed Signal Oscilloscope, signal generators etc. Experience in FPGA Timing closure Experience working with SoC based systems and knowledge of protocols such as SPI, UART, I2C, USB. Strong documentation and presentation skills; must be proficient in relevant software 	

0603	Optical Communication	• Strong optical communication fundamentals	Minimum 2 years in Research and Development
		 Experience of designing optical communication products 	B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
		 Good theoretical and practical knowledge of optical devices used in Optical Communication and Quantum Communications 	/FIID (III Televalit aleas)
		 Good Board design skills and proficiency in tools used for the same 	
		 Strong analog design concepts and proficiency in tools used for the same Strong documentation and presentation skills; must be proficient in relevant software tools used in the same 	

PROJECT- Post-Quantum Cryptography (ProjectCode-07) Positions (approx.) - 05

	ons (approxi)		
WORK	Work Area	SKILL SET	Experience/
AREA			Qualifications
CODE			
0701	Embedded Software	 Embedded Programming with different embedded MPU and MCUs, C and ARM assembly programming, GNU toochain, Bootloader and Secure Boot development, Board bringup, Buildroot, RTOS and FreeRTOS based development Experience in Baremetal software development, Linux kernel and Device Driver programming, Open Source Software development Experience working with FPGA or SOC based systems, Yocto, Python 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/ /PhD (in relevant areas)

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0702	FPGA Design & Implementation	scripting, GUI development using Qt/QML Experience working with lab tools (Oscilloscope, Debuggers etc.), Linux and RTOS based system programming experience Good Verilog/VHDL programming skills, FPGA design development experience Exp. with FPGA synthesis tool- Xilinx Vivado, Altera Quartus II or similar, IP Core development and integration Experience with Mixed Signal Oscilloscope usage Experience in FPGA Timing closure Experience in TCL/Tk and Python scripting,Good C programming skills Experience in Linux kernel and Device Driver Programming, Experience in Baremetal and FreeRTOS based system development Experience working with SoC based systems Lab experience probing boards and debugging.Protocol knowledge of peripherals: SPI, UART, I2C, USB.	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
0703	Post- Quantum Cryptography Algorithms Implementation & Testing	 Experience in Design, Implementation & Testing of Post-Quantum Cryptography (PQC) Algorithms, Side- Channel Analysis & Testing Experience in working in Security Projects. 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
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0704	Post-Quantum Cryptography Algorithms Theoretical Analysis & Cryptanalysis	•	Strong Theoretical background in Cryptography. Experience of Theoretical Analysis on Lattice and Code based PQC algorithms, analysis of security strengths Study of security attacks, cryptanalysis, Side-channel analysis etc.	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC)/ PhD (in relevant areas)
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PROJECT- Validation and Field Support (ProjectCode-08) Positions (approx.) - 15

WORK AREA CODE	Work Area	SKILL SET	Experience/ Qualifications
0801	Networking Domain	 Working knowledge of TCP/IP protocol Suite, networking devices like Router, Switch(L2 & L3), VoIP, Firewall, Access Points etc. Network Configuration and testing. Understanding of IP/MPLS and Ethernet technologies, Switching and Routing protocols (STP, RSTP, MSTP, OSPF, BGP, RIP, EIGRP etc.), SIP protocols etc. 	Minimum 2 years in Research and Development / Field Support/Validation in relevant area B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)

		 Network Administration, Systems/network Integration, Troubleshooting, Operation & Maintenance, understanding of networking security CCNA/CCNP certification preferred.
0802	Field Support (Telecom & IP Network)	 Candidate shall have experience of installation, deployment and support of different elements of 2G/3G/4G network Candidate shall have experience of working on Network management and troubleshooting. Hands-on experience of working on UNIX/Linux environment, shell scripting will be an additional advantage Candidate shall have experience of working on Cloud environment. Knowledge of Architecture of EPC & IMS as well as different Call flows in 4G/Volte Network Good grasp on different Debugging Tools like Wireshark, Tcpdump, Tethereal Knowledge of Networking Protocols i.e. OSPF, BGP, ACL, MPLS etc. Comfortable with frequent Travelling/Field Visit at Customer sites Good verbal and oral communication skill

PROJECT- Artificial Intelligence (ProjectCode-09) Positions (approx.) - 5

WORK AREA	Work Area	SKILL SET	Experience/ Qualifications
0901	Leadership Position in AI backend pipeline design and develpment	 Kafka and spark architectures Experience in AI backend pipeline design and development C/C++, Java, Python, R and Scala 	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
0902	Leadership Position in Natural Language Processing	• Should have sound knowledge of machine learning and deep learning concepts, NLP, should have aquintance in various frameworks like tensorflow, keras, pytorch, Java, Python etc.	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
0903	Leadership Position in Security evaluations and test automations and load testing tools	• Experience in handling security issues, protocols and mechanisms, security evaluations, server high-availability, load-balancing, proxy configurations; development of load testing tools, performance, health monitoring and service recovery scripts, docker/container configurations for server solutions is preferred.	Essential- Minimum 5 years experience for B.Tech(CS/EC)/B.E (CS/EC)/M.Tech(CS/EC)/M.E.(CS/EC)/PhD (in relevant areas)
0904	Computer Vision using Deeplearning	 Deeplearning Architectures, C/C++, Python, Caffe, PyTorch, Keras and Tensorflow, OpenCV 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)
0905	Big Data Search over Metadata generated by AI engine/ Augumented Reality/Visual Positioning	 HADOOP, MongoDB & Elastic Search Augumented Reality Application Development Visual Positioning application Development 	Minimum 2 years in Research and Development B.Tech(CS/EC)/B.E (CS/EC)/ M.Tech(CS/EC)/M.E.(CS/EC) /PhD (in relevant areas)