**Project Name:** Collaborative Research Program

Post Code: 76

**Location**: New Delhi

## **Roles and Responsibilities:**

- a) Create a project Plan, coordinating with all stakeholders
- b) Monitor the daily/weekly progress to generate project reports
- c) Monitor, track, and ensure requisite controls across various critical & non-critical activities; Develop a comprehensive program Plan for each of the Product/solution
- d) Ensure periodic review, along with stakeholders, of each program, timely closure/ compliances by each stakeholder
- e) Ensure documentations, reports from planning to delivery
- f) Coordinated efforts among stakeholders, and ensure monitoring of every mile-stone, its completion, reporting, invoice and coordination with finance/ DOT USOF etc

### **Deliverables**

- a) Work closely with DOT/Project sponsor, and all stake holders from C-DOT and applicants/consortium (academia, industry, start-ups, institutes), ensuring timely closure of process steps like evaluation, meetings, proposals and compliances for approvals to happen as per defined time frame
- b) Creating project plans, scope/ responsibility matrix, deliverables, monitor requisite resources deployment, and timely flags
- c) To identify risks and opportunities across multiple programs and present an overall Program progress metrics, with an analysis & suggested plans to overcome program risks
- d) Project's monitoring & controls and proactive redressal.

#### **Minimum Qualifications:**

• Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, and BE/B.Tech in Electronics & Telecommunication, or Computer Science) from a recognised university. Candidates with MBA and having PMP certification will be preferred

## **Eligibility Criteria:**

**Project Name:** Marketing and Corporate Communication

Post Code: 50

No. of Post(s): 08

Location: New Delhi/Bangalore

#### Roles and Responsibilities:

- Customer engagements
- Preparation of Project proposals, business presentations etc
- Organize discussions and hold consultative deliberations with internal and external stakeholders, as and when required, to meet the customers' requirements.
- To represent C-DOT in various exhibitions to demonstrate & market / promote C- DOT products in exhibitions

#### **Skills and Abilities:**

- Telecom & IT technologies' awareness.
- Good knowledge and understanding of products and telecom technologies in general.
- Good communication, presentation, writing, organizing, planning, and creative kills, as required to draft several documents, follow-up mails, technical bids pertaining to business leads.
- Knowledge of tools & techniques office automation tools, ERP /& MIS, etc.
- Soft skills Good communication & writing skill,
- People skill soft-spoken, pleasing, disciplined, time-sensitive, capability to handle ambiguity, etc.

## **Minimum Qualifications:**

□Min 65% in (10 <sup>th</sup> , 12 <sup>th,</sup> BE/B.Tech in Electronics & Communication Engineering
Computer Science or equivalent degree from a recognized college/university)

## **Eliqibility Criteria:**

Project Name: PMG

Post Code: 51

No. of Post(s): 02

**Location**: New Delhi

## Roles and Responsibilities:

- Annual Plan & Budget preparation strategic alignment of resources (financial, manpower planning) with the direction, as determined for the business and release of Annual Business Plan (ABP).
- Preparation of various project progress report in different required formats
- Audit co-ordination with C& AG auditor, statutory auditor, etc. for smooth carrying of project audit, involving replies to various queries raised, settlement of pending queries / paras, replies to inspection report, etc.
- Parliamentary affairs Replies to various queries related to projects under implementation, etc.

#### **Skills and Abilities:**

- Telecom & IT technologies' awareness.
- Knowledge of program management project planning & control, cost /schedulecontrol system, etc.
- Knowledge of tools & techniques estimation, data analytics, office automationtools, ERP /& MIS. etc.
- Soft skills Good communication & writing skill,
- People skill soft-spoken, pleasing, disciplined, time-sensitive, capability tohandle ambiguity, etc.
- Hands-on development experience in Java, enterprise Java applications; Oracle PostgreSQL preferred.

### Minimum Qualifications:

□ Min 65% in (10<sup>th</sup>, 12<sup>th,</sup> BE/B.Tech in Electronics & Communication Engineering / Computer Science or equivalent degree from a recognized college/university)

## **Eliqibility Criteria:**

**<u>Project Name:</u>** Lab Infrastructure Support

Post Code: 52

No. of Post(s): 03

Location: New Delhi

## Roles and Responsibilities:

To meet the lab support requirements of lab users by:

- Ensuring availability of necessary hardware and software and other lab equipment
- Addressing any issues relating IP Networking, Faulty cards, Data configurations, Software versions etc.
- Maintaining and provisioning testing equipment for the users
- DC Power Plants/battery Banks Maintenance, Power provisioning support in Labs

## **Skills and Abilities:**

- Basic Knowledge of IP Networking and Cabling, Optical connectivity
- Knowledge of Technologies like 4G, 5G, eNodeB/gNodeB is desirable
- Good Communication Skills

## **Minimum Qualifications:**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, B.E. / B. Tech. in Electronics & Communication Engineeringor equivalent degree from a recognized college/university)

## **Eliqibility Criteria:**

 0-3 years of professional work experience post qualification. Preference will be given to candidates having fixed and mobile (2G/3G/4G) telecom equipment deployment field experience.

**Project Name:** a) 4G/5G testing/POC/deployment in Railways

b) 4G/5G deployment in BSNL

Post code: 15

No. of Post(s): 15

**Location:** New Delhi/Kolkata

## Roles and Responsibilities:

- 1. Installation, commissioning and day to day activities to be performed atoffice and various sites PAN India
- 2. System integration and testing in C-DOT lab and at various PAN Indiasites.
- 3. Interfacing with various government and non-government customers for resolution of issues coming in their network

### **Skills and Abilities:**

- Candidate shall have experience of installation, deployment and support of different elements of 2G/3G/4G network
- 2. Candidate shall have experience of working on Network management and troubleshooting.
- 3. Hands-on experience of working on UNIX/Linux environment, shell scripting will be an additional advantage
- 4. Candidate shall have experience of working on Cloud environment.
- 5. Knowledge of Architecture of EPC & IMS as well as different Call flows in 4G/Volte Network
- 6. Good grasp on different Debugging Tools like Wireshark, Tcpdump, Tethereal
- 7. Knowledge of VOIP, SIP, Megaco, Diameter, MAP, GTP etc.
- 8. Knowledge of Networking Protocols i.e. OSPF, BGP, ACL, MPLS etc.
- 9. Comfortable with frequent Travelling/Field Visit at Customer sitesGoodverbal and oral communication skill

## **Minimum Qualifications:**

□ Min 65% in (10 <sup>tn</sup> , 12 <sup>tn</sup>	,B.E/B.Tech in C	CSE/IT/ECE or	equivalent degree	e from arecognized
college/university.				

#### **Eligibility Criteria:**

□ 0-3 years of pr	ofessional work	cexperience po	st qualification.	Preference will	be given to	oGATE
qualified candida	ates.					

Project Name: Switch and Router support- R34 (NGN)
Post code: 17
No. of Post(s): 2
Location: New Delhi
Roles and Responsibilities:
Managing Router lab and associated infrastructure
Field support activities
Skills and Abilities:
<ul> <li>Knowledge of computer networking.</li> <li>CCNA certification/training preferable</li> </ul>
Minimum Qualifications:
□Min 65% in (10 <sup>th</sup> , 12 <sup>th</sup> , B.E/B.Tech in ECE from a recognized college/university).
Eligibility Criteria:
$\hfill \Box$ 0-3 years of professional work experience post qualification. Preference will be given to GATE qualified candidates.

<u>Project Name:</u> 4G LTE IMS CONVERGED CORE COMMERCIALIZATION IN BSNL NETWORK - R42

Post code: 27

No. of Post(s):2

**Location:** Bengaluru

## **Roles and Responsibilities:**

- Development of packet/message processing application
- Testing and debugging

## **Skills and Abilities:**

- C Programming
- Knowledge of Linux, shell scripting
- Knowledge of networking IPC, sockets
- Knowledge of compilation and debugging tools

## **Minimum Qualifications:**

□ Min 65% in (10 <sup>th</sup> , 12 <sup>th</sup> ,B.E/B.Tech in Computer Science from a recognized
college/university).

## **Eliqibility Criteria:**

□0-3 years of	f professional	work experie	ence post qua	alification. Pre	ference will be	given toGAT	Έ
qualified cand	didates.						

Project Name: DEVELOPMENT OF 5G STANDALONE (SA) CORE - G05 code

Post code: 28

No. of Post(s): 2

**Location:** Bengaluru

## Roles and Responsibilities:

- Platform s/w porting of embedded systems
- Tester s/w development and testing.
- Integration testing with h/w

## **Skills and Abilities:**

- Knowledge of Embedded systems (Bootloader, OS etc.) with anyprior testing experience (if possible)
- C programming
- Knowledge of Linux, shell-scripting
- Knowledge of compilation and debugging tools

## **Minimum Qualifications:**

☐ Min 65% in (10 <sup>th</sup> ,	12 <sup>th</sup> ,B.E/B.Tech in	Computer Science from	a recognized
college/university).			

## **Eliqibility Criteria:**

□0-3 years of professiona	work experience post	t qualification. Prefere	ence will be given toGATE
qualified candidates.			

**Proiect Name:** 4G Radio Access Network

Post code: 39

No. of Post(s): 4

**Location:** Bengaluru

#### Roles and Responsibilities:

- Development of EMS Features
- Handling Integration activities
- Automation of test plans
- Migration of 4G EMS to 5G complaint EMS (Element Management System)
- Testing and Trials

#### **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing
- Wireless network system architecture and subsystem design
- 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
- Comfortable with organization processes
- 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)

## **Minimum Qualifications:**

☐ Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, B.E/B.Tech in CSE from a recognized college/university).

#### **Eligibility Criteria:**

□ 0-3 years of professional work experience post qualification. Preference will be given to GATE qualified candidates.

**Proiect Name:** 4G Radio Access Network

Post code: 40

No. of Post(s): 6

**Location:** Bengaluru

## Roles and Responsibilities:

 Platform Software/ Firmware/ Operating Systems/ Drivers Development, Testingand Trials

### **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing
- Wireless network system architecture and subsystem design
- 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
- Comfortable with organization processes
- Processors, Devices, SoCs, FPGA, on-board devices and interface devices.
- Operating Systems, distributions, packaging, devices, kernels, device drivers, dataplane development, uboot, compilation, linking, loading
- C/C++ programming skills along with scripting.
- Power-on self-test.

## **Minimum Qualifications:**

☐ Min 65% in (10<sup>th</sup>, 12<sup>th</sup> ,B.E/B.Tech in CSE /ECE from a recognized college/university).

## Eligibility Criteria:

 $\ \Box$  0-3 years of professional work experience post qualification. Preference will be given to GATE qualified candidates.

**Proiect Name:** 4G Radio Access Network

Post code: 41

No. of Post(s): 6

**Location:** Bengaluru

## **Roles and Responsibilities:**

RAN/RRH related development in FPGA, System level testing, and Trials

### **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing
- Wireless network system architecture and subsystem design
- 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
- Comfortable with organization processes
- Good understanding of 3GPP wireless standards

#### **Minimum Qualifications:**

☐ Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, B.E/B.Tech in ECE from a recognized college/university).

## **Eligibility Criteria:**

□0-3 years of professional work experience post qualification. Preference will be given to GATE qualified candidates.

**Proiect Name:** 4G Radio Access Network

Post code: 42

No. of Post(s): 6

**Location:** Bengaluru

## Roles and Responsibilities:

RRH Analog & RF Hardware and System Level Testing, Trials

#### **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing
- Wireless network system architecture and subsystem design
- 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
- Knowledge of industry standards, standardization
- Comfortable with organization processes
- Good understanding of 3GPP wireless standards

## **Minimum Qualifications:**

□ Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, B.E/B.Tech in ECE from a recognized college/university).

## **Eliqibility Criteria:**

**Project Name:** 4G Radio Access Network

Post code: 43

No. of Post(s): 8

**Location:** Bengaluru

## Roles and Responsibilities:

LTE/NBIOT/5GNR Layer 2, Layer 3, RRM, SON Development, Testing, Trials

## **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, Signal Processing
- Wireless network system architecture and subsystem design
- 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
- Comfortable with organization processes
- 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 Qualifications:**

 $\square$  Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, B.E/B.Tech in ECE/CSE from a recognized college/university). Preference will be given to candidates from CSE background.

#### **Eliqibility Criteria:**

**Proiect Name:** 4G Radio Access Network

Post code: 44

No. of Post(s): 6

**Location:** Bengaluru

## **Roles and Responsibilities:**

LTE/NBIOT/5GNR Layer 2, Layer 3, RRM, SON Development, Testing, Trials

## **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, SignalProcessing
- Knowledge of LTE / UMTS / WCDMA / HSDPA/ 5G or WLAN standards in the physicallayer and future developments within 3GPP, OFDM, MIMO
- Wireless network system architecture and subsystem design
- 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
- Comfortable with organization processes
- C/C++ programming skills along with scripting.
- Unix Network Programming
- Data Structures and Algorithms
- Good understanding of 3GPP wireless standards

#### **Minimum Qualifications:**

□Min 65% in (10 <sup>th</sup> , 12 <sup>th</sup> , B.E/B.Tech in ECE/CSE from a recognized college/u <b>Eligibility Criteria:</b>	niversity)
□0-3 years of professional work experience post qualification.	

**Project Name:** 4G Radio Access Network

Post code: 45

No. of Post(s): 6

Location: Bengaluru

## Roles and Responsibilities:

- Hardware Development, Integration Testing
- BOM preparation and verification
- Card level documentation
- QA Validation
- Card testing and Card level reworks
- Development, Testing and Trials

## **Skills and Abilities:**

- Knowledge of Wireless Technologies, Computer Networking, Data Networking, SignalProcessing
- Wireless network system architecture and subsystem design
- Computer Architecture, Digital Logic, Processor/FPGA/SoC interfacing
- Expertise in hardware design (Circuit Design and Analysis, PCB, Devices, Signal andpower integrity, interface with CAD/VDG/EPG)
- Testing and debugging tools, Signal generator/analyzers, Logic Analyzers
- Knowledge of industry standards, standardization
- Comfortable with organization processes
- Good understanding of 3GPP wireless standards

#### **Minimum Qualifications:**

 $\Box$  Min 65% in (10  $^{th},$  12  $^{th}$  , B.E/B.Tech in ECE from a recognized college/university).

## **Eliqibility Criteria:**

Project Name: IPR/KMG
Post Code: 60
No. of Post(s): 01
Location: New Delhi
Roles and Responsibilities:
<ul> <li>□ Support for IPR filing, prior art &amp; record keeping</li> <li>□ Training organization &amp; management</li> <li>□ Maintenance of Learning Management System(LMS) software &amp; training portal</li> </ul>
Skills and Abilities:
<ul> <li>Well conversant with IPR (Patents,Copyright) &amp; patentability aspects</li> <li>Proficient in MS-Office (Excel, Word etc)</li> <li>Working knowledge of web development (PHP,MySQL,Apache,HTML/CSS,Li</li> </ul>
nux)  Good inter-personal, communication & drafting skills.
Minimum Qualifications:
☐ Min 65% in (10 <sup>th</sup> , 12 <sup>th,</sup> BE/BTech in CSE/ECE or equivalent degree from a recognized college/university)
Eligibility Criteria:
0-3 years of professional work experience post qualification

**Project Name:** 5G

Post Code: 65

**No. of Post(s):** 6

Location: Delhi

## **Roles and Responsibilities:**

- Development & testing of 5G SA core of small-scale enterprise network/ network in a box
- Testing multi-vendor solutions in 5G Campus network

## **Skills and Abilities:**

- Proficiency in the C/C++ language, Algorithms, Data Structures, Linux, multithreaded system and scripting
- Good knowledge of IP networking
- Candidates having knowledge of 4G/5G protocols shall be preferred

#### **Minimum Qualifications:**

- Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and BE/B.Tech in CSE/ECE) from a recognized college/university
- ME/M.Tech. (CSE/ECE) will be given preference

## **Eligibility Criteria:**

**Project Name:** 4G/5G Core Network Development

Post Code: 66

**No. of Post(s):** 32

**Location**: New Delhi

#### Roles and Responsibilities:

- Analyze system requirements by studying standards
- Create technical specifications based on standard requirements
- Preparing architecture design of the system/module
- Defining the interfaces with other modules
- Detailed design of the system/module
- Exploring the new technologies more appropriate for the system/module
- Shall be able decide the databases more suitable for the system
- Create scalable design
- Produce clean, efficient code based on specifications
- Write testing stubs as per CI/CD
- Testing of the system
- Module/System integration testing with other modules
- Create Test Plans and reports
- Automated building and testing environment creation
- Work with other team members
- Troubleshoot, debug and upgrade existing software
- Gather and evaluate user feedback
- Recommend and execute improvements
- Create technical documentation for reference and reporting
- Debug coding problems quickly and efficiently to ensure a productive workplace

#### Skills and Abilities:

- Shall have experience on Mobile Technologies (4G/5G)
- Should have worked cloud based software development
- Should have good knowledge of CI/CD
- Shall have experience of protocol software development
- Shall have good knowledge of networking concepts
- Shall have good expertise in development of Internet Protocol based applications
- Prefer candidates having 4G/5G protocols
- Shall have experience of database oriented application development
- Should have experience of Management Interface development
- Preference would be given to candidates having containers based application development experience.

Experience working on large-scale software projects

Professional experience using cybersecurity and open source technology

- Experience developing software utilizing various coding languages including C/C++, Golang, rust, java, web technologies etc
- Outstanding collaboration and communication skills are essential
- Experience developing secure software systems based upon industry specifications
- Analyze code for weaknesses and errors, and improve them.
- Experience developing customized code for multiple projects simultaneously

## **Minimum Qualifications**:

- Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and BE/B.Tech in CSE/ECE/IT from a recognized college/university
- ME/M.Tech(CS/EC/IT) from a recognized college/university will be given preference

## **Eligibility Criteria:**

**Project Name:** 4G/5G Core Call Processing Software

Post Code: 67

No. of Post(s): 5

Location: Delhi

## **Roles and Responsibilities:**

- Identification and analysis of software requirements
- Design and Development of software application
- Unit testing, Test case automation and debugging of software
- Functional and Integration testing

## **Skills and Abilities:**

- Programming Languages -C/C++
- Linux based application programming
- Scripting Languages -TCL, Python, JavaScript,
- Protocols -TCP/IP, UDP, IPC, SIP, RTP handling, Diameter and Socket programming
- Database -Relational and Non-relational databases
- Clarity of Networking concepts
- Knowledge of compilation and debugging tools
- Preferably knowledge of Cloud Infrastructure, SDN Concepts, Network function virtualization and DevOps methodology

## **Minimum Qualifications:**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and BE/BTech in CSE/ECE/IT from a recognized college/university

## **Eligibility Criteria:**

**Project Name:** 4G/5G Software Application Development

Post Code: 68

**No. of Post(s):** 45

Location: Delhi

#### **Roles and Responsibilities:**

- Identification and analysis of software requirements
- Design and Development of software application, User, Web Interfaces
- Unit testing, Test case automation and debugging of software
- Functional and Integration testing

#### **Skills and Abilities:**

- Proficiency in programming languages, such as C/C++/Java/Python
- Expertise in Web/UI development using following technologies/frameworks
  - bootstrap
  - React
  - javascript/jQuery/Ajax
  - Angular.js
  - HTML5
  - CSS
  - JSP with Struts
  - Python
- Good experience of using browser debugger tools like firebug or similar tools.
- Good knowledge of DOM structure.
- Good knowledge of hosting web applications on web server Tomcat/WildFly/NGINX.
- Should have worked with SOAP/JSON data serialization, XML, REST/OpenAPI.
- Knowledge of framework such as Netbeans, Eclipse, IntelliJ, SpringBoot/DJANGO
- Knowledge on Database MYSQL,PostgreSQL/ PSQL queries/Big Databases
- Knowledge of working with GIT and Maven
- Knowledge of OpenStack, Kubernetes and Docker environment

#### **Minimum Qualifications:**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and B.E. / B. Tech In Computer Science / Information Technology/ Electronics ) from a recognized college/university

## **Eligibility Criteria:**

**Project Name:** 4G/5G Project Management

Post Code: 69

No. of Post(s): 4

Location: New Delhi

#### Roles and Responsibilities:

- Project Requirement understanding and prioritizing
- Management of project activities and tracking via tool
- Training material preparation
- Generating quality documentation of project and maintaining document in repository

## **Skills and Abilities:**

- Domain knowledge of 4G/5G protocols, architecture and network requirements
- Good analytical ability to understand customer requirement
- Skilled in technical writing
- Good communication skills
- Working knowledge of project management tools for creating project plans and generating various reports
- Good Knowledge of MS-Office tools

## **Minimum Qualifications:**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and B.E. / B. Tech In Computer Science/IT/Electronics) from a recognized college/university

## **Eligibility Criteria**

**Project Name:** 4G/5G Field Support

Post Code: 70

No. of Post(s): 40

Location: Delhi/Bengaluru

## **Roles and Responsibilities:**

Field Support for 4G Rollout

#### **Skills and Abilities:**

- 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 VOIP, SIP, Megaco, Diameter, MAP, GTP etc.
- 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

## **Minimum Qualifications:**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and B.E. / B. Tech In Computer Science / Information Technology/ Electronics) from a recognized college/university

## **Eligibility Criteria:**

- 0-3 years of professional work experience post qualification.
- Experience of operation and maintenance/deployment in Field of Telecom and IP Networking will be given preference

Project Name: 4G/5G Lab Infrastructure and Test Setup

Post Code: 71

**No. of Post(s):** 04

Location: New Delhi

#### **Roles and Responsibilities:**

- Ensuring availability of necessary hardware and software and other lab equipment
- Addressing any issues relating IP Networking, Faulty cards, Data configurations, Software versions etc.
- Maintaining and provisioning testing equipment for the users
- DC Power Plants/battery Banks Maintenance, Power provisioning support in Labs
- Cloud Infrastructure Setup for 4G labs
- Installation of OS, Controllers, computes and launching of 4G nodes
- Layer-2 and Layer-3 related configurations, IP planning
- Orchestrating the cloud services
- Installation of K8 clusters and launching applications on K8
- Management of resources for the various applications on the cloud
- Implementation of new services/features/releases at the cloud level

## **Skills and Abilities:**

- Basic Knowledge of Networking and Cabling, Optical connectivity
- Strong IT skills, Creativity and Problem Solving
- Communicate regularly and be ready to learn new things.
- Be adaptable and flexible
- Knowledge of 4G, 5G, RAN equipment (eNodeB, gNodeB), switches and routers desirable

#### **Minimum Qualifications:**

• Min 65% in (10<sup>th</sup>, 12<sup>th</sup>,BE/B.Tech in Computer Science/Information Technology/ Electronics or equivalent degree) from a recognized college/university)

#### **Eligibility Criteria:**

• 0-3 years of professional work experience post qualification. Preference will be given any cellular (2G/3G/4G) wireless deployment field experience

**Project:** M2M Applications Development

Post Code: 72

No of Posts: 2

Location: New Delhi

### **Roles & Responsibilities**

- Design and Development of oneM2M compliant IoT head-end applications using REST API.
- Design and development of web application modules such as user Interface, reporting module, analytical module, graphical design etc
- Design and development of database, schemas for new features
- · Perform integrated testing of DB.
- Perform functionality testing, integrated testing w.r.t MVC web interface.
- Design, development, integration and testing of embedded applications on the field devices based on oneM2M standards
- Capture design specification in well documented requirement specifications and evolve appropriate systems architecture

#### Skills:

- Good Knowledge of
- C/C++, Python, HTML5/CSS3.
- Design and development of DTLS, TLS, Certificate based security, PSK
- Frameworks (Springboot, Eclipse, Arduino IDE, AngularJS)
- OpenCV, Keras, Tensorflow, NumPy, Django, Android Studio, SQLite
- XSD, JSON/XML (Storage of various types of data)
- Docker containers/Kubernetes
- oneM2M knowledge desirable
- Linux System, shell scripting
  - Java, JavaScript, jQuery, React, bootstrap, CSS, Angular.js, struts, jsp and Junit
  - Database (Mysql, Postgre SQL, Mongo DB) queries, normalisation, performance tuning etc.
  - •In-Memory data bases
  - •OOPs concepts, Data structures and Algorithms
- Microservices, maven
- RESTful architecture
- Application and web server
- HTTP /CoAP/ MQTT

**Minimum Qualifications:** Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and B.E. / B. Tech In Computer Science /Computer Engg/ Information Technology ) from a recognized college/university

#### **Eligibility Criteria:**

**Project**: M2M Hardware integration and embedded software design and development

Post Code: 73

No of Posts: 1

**Location**: New Delhi

#### **Roles & Responsibilities**

- Design and integration of IoT field domain hardware involving sensors, actuators, microcontroller and microprocessor
- Perform functionality testing, integrated testing of the field domain nodes with CCSP (oneM2M compliant IoT platform)
- Design, development, integration and testing of embedded applications on the field devices based on oneM2M standards
- Capture design specification in well documented requirement specifications and evolve appropriate systems architecture
- Prepare product reports and documentation (Requirement specification doc, Systems diagram, Flowchart, Firmware architecture, Code documentation, etc.)

## Skills:

Should have Good Knowledge of

- Embedded Hardware Design, Microchip PIC microcontrollers, AVR microcontrollers, NXP microcontrollers, Power Electronics, Analogue Circuits, Arduino, Raspberri Pi 3/4, Jetson nano, ARM Cortex Processor
- 3GPP technologies particularly NB-IoT and Cat M1
- HTTP /CoAP/ MQTT
- Java, Python, Embedded C & C ++, MongoDB, MariaDB
- Design and development of DTLS, TLS, Certificate based security, PSK
- IDEs like Arduino IDE and others
- XSD, JSON/XML (Storage of various types of data)
- Docker containers/Kubernetes
- oneM2M knowledge desirable
- Linux System, shell scripting

#### **Minimum Qualification**

 Min 65% in (10<sup>th</sup>, 12<sup>th</sup> and B.E. / B. Tech In Electronics and Communication ) from a recognized college/university

#### **Eligibility Criteria**

**Project Name:** 4G/IMS and 5G (Validation)

Post code: 74

No. of Post(s): 20

**Location**: New Delhi

### **Roles and Responsibilities:**

 In depth knowledge of Telecom products, knowledge of various interfaces used by these nodes as per 3GPP specification for IMS, 4G and 5G

- Should have practical experience of conducting validation of 4G/3G or IMS or any other core technologies.
- Field problem Simulation in lab
- Ability to identify problem and demonstrate the same to design team
- Preparation of various documents like Validation plan, User level document etc.
- Imparting training to field support team and customer
- Conducting field trail and validation testing in field.

## **Skills and Abilities:**

- Experience of validation of telecom products
- Should have of well-versed with Integrations and interoperability activities
- Good knowledge and understanding of latest telecom technologies especially mobile networks. Should have in depth knowledge of 4G/5G and various interfaces and protocols as per 3GPP.
- Technical understanding of various telecom standards, interoperability and compliance requirements is required
- Excellent communicator, team player who can work independently also
- Scripting of test cases for automation
- Excellent problem finding and debugging skills

## **Minimum Qualifications:**

• Min 65% in (10<sup>th</sup>, 12th and B.E/B.Tech in Computer Science/ Information Technology/ Electronics or equivalent degree ) from a recognized college/university.

## **Eligibility Criteria:**

Project Name: 4G/5G IT and Networking support

Post Code: 75

No. of Post(s): 03

**Location**: New Delhi

## **Roles and Responsibilities:**

Configuration and Management of Servers, Workstations and PCs.

- System administration of Windows OS (Windows servers and Desktop versions) and Linux based systems (Ubuntu, RedHat, CentOS flavours).
- Working knowledge on cloud will be added advantage.
- Should have good understanding of network configurations. Experience in switch and router configuration is desired.

### **Skills and Abilities:**

- Install, configure, update and maintain Windows and Linux based systems.
- Installation of software packages and related configuration for Client/Server and cloud setup.
- Regular update of Patches, Hot fixes, Virus signatures and updating of related software.
- Network and Security Configuration in servers / systems.
- Configurations and setup for Online meetings platforms: Zoom, Microsoft Meetings, Google Meet, Webex, GoToMeeting etc.
- Troubleshooting of day to day problems related to working of Servers / PCs / Network on different versions of Windows and Linux.

## **Minimum Qualifications:**

• Min 65% in (10<sup>th</sup>, 12<sup>th</sup>, BE/B.Tech in Electronics & Communication Engineering / Computer Science / Information Technology or equivalent degree) from a recognized college/university

#### **Eligibility Criteria:**