City of Irving Job Description

IT Communications Engineer

FLSA Status:	EXEMPT	**Job Department:**	Information Technology
Job Code:	I171	**Reports To (Job Title):**	IT Communications Manager

PURPOSE

This position performs primarily design and diagnostic troubleshooting of the City's public safety two-way communications network and ancillary systems, while also providing technical support via system installation, repair, and maintenance. These systems include, but are not limited to, the early warning system, fire station alerting and conventional RF systems. This position should have an advanced level of technical knowledge and skills so as to perform its duties and responsibilities with no guidance.

This position varies from the IT Communications Analyst position in that it requires the ability to design the City's RF communications infrastructure networks, and requires enough knowledge of the various, IT-supported systems to provide guidance and instruction to the entire IT Communications team for the purposes of installation, maintenance and troubleshooting. Further, this role requires a full understanding not only of our various systems, but also their interaction with one another. As a subject matter expert, This position also differs in that, as time allows, it is encouraged to engage with peers at a local, state and national level to stay abreast of the various standards and participate in the various committees associated with the systems and technologies supported.

ESSENTIAL DUTIES AND RESPONSIBILITIES

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily.*

- Design, install, troubleshoot, repair, and maintain the Public Safety two-way communications network and ancillary systems, including but not limited to: conventional RF systems, fire station alerting, portable and fixed mobile radios, solar panel systems, PA sound systems, alarm systems, display systems, outdoor warning systems, microwave and network backhaul.
- Recommend systems that will monitor and ensure compliance to FCC regulations; Establish and maintain guidelines for Radio system security practices; Deploy and maintain the City's Radio System anti-virus and anti-spyware protection.
- Understand RF prorogation requirements for various, RF equipment's antenna system needs, control station systems, LMR fixed equipment, and microwave communication radios and the mapping of these RF networks.
- Design, install, troubleshoot, and repair IP network infrastructure (Wireless/Wired, Switches, Drops/Termination).
- Install and manage software systems related to communications or RF infrastructure and the various systems they run; additionally, work with vendors on troubleshooting issues related to their software.
- Design, install, troubleshoot and repair Fiber optic networks (Single Mode/Multi-Mode).
- Develop – in addition to programming – subscriber personalities for Communications equipment.
- Manage and maintain proper performance of the various systems and provide suggestions for tools for reporting and monitoring performance of said systems.

- Develop, and/or oversee the construction of, technical assistance and training for users of communication systems from all departments.
- Prepare and administer the security configurations of the servers.
- Install and (re-)configure new and existing computer hardware as related to the Public Safety Communications Two-way radio network.
- Maintain awareness of current security threats and provide executive briefings as required.
- Provide emergency response as needed.
- Maintain, upgrade, and support firewalls, switches, and routers to establish and maintain systems security plans.

As needed and/or assigned, perform duties of the IT Communications Analyst(s), such as (but not limited to) the following:
- Design, install, troubleshoot, repair and maintain 12VDC vehicular systems and hardware (MDC, DVR, AVL, ALPS, emergency lights and sirens and other related equipment).
- *As assigned*, manage outside Contractors work related to various internal projects.
- Provide support and training to IT Communications Technician(s), Analyst(s), and contractors.
- Design and/or fabricate communications enclosure equipment, and build custom electronic circuits for specialized applications.
- Maintain and install new and upgraded operating system servers, routers, and switches on Public Safety RF Two-way communications radio network, Early Warning System, Fire Station Alerting, Microwave network, and mobile data devices.
- Ensure compliance with state and federal regulations, mandates and statutes as they relate to privacy and information security; ensure communications equipment complies with FCC regulations.
- Maintain databases related to Communication systems, as well as records / documentation of work completed.

As needed and/or assigned, perform duties of the IT Communications Technician(s), such as (but not limited to) the following:
- Perform frequent equipment tests as part of preventive maintenance.
- Work with hardware and software vendors on installation, project coordination, maintenance, and troubleshooting.
- Maintain and contribute to the development of guidelines for Radio system security practices.
- Provide technical support and training for end users.
- Provide on call support after hours, on a 24 hour, 7 days / week basis.

OTHER DUTIES AND RESPONSIBILITIES

- Track and update inventory of the hardware we maintain.
- Keep management abreast of any issues or concerns associated with various Duties and Responsibilities assigned.
- Perform related duties as assigned.

SUPERVISORY RESPONSIBILITIES

Functional and Technical Supervision - Regular responsibility for giving direction and guidance to employees as a lead worker, project manager or internal advisor. As an ongoing part of the position, the employee can expect to supervise approximately 1-5 employees.

FINANCIAL / BUDGETARY RESPONSIBILITY

May be asked to receive quotations for various supplies and projects and must understand how to differentiate the best, balanced and most appropriate value to the City, and IT customers.

QUALIFICATIONS:
The requirements listed below are representative of the knowledge, skill, and/or ability required.*

EDUCATION

- Equivalent to a Bachelor's Degree from an accredited college or university with major course work in Computer Science, Information Systems or a closely related field.
- Alternatively, with two (2) years of additional, relevant experience, equivalent to an Associate's degree from an accredited college or university with major course work in Information Technology or a closely related field.

EXPERIENCE

- At least three (3) years of job related work experience radio and wide area or metro area communications equipment and systems or a closely related field

CERTIFICATES, LICENSES, REGISTRATIONS

- Appropriate, valid, state-issued driver's license is required.
- NIMS 100-200-400-700-800 COML
- CJIS qualified

KNOWLEDGE OF

- Computers and Electronics: Electric circuit boards, processors, chips, and computer hardware and software.
- Customer Service: Principles and processes for providing customer and personal services including a desire to help customers regardless of their circumstance.
- English Language: The structure and content of the English language, including the meaning of words and grammar.
- Advanced Math: Mathematical calculations including geometry, trigonometry, algebra, statistics, and calculus.
- Computer Networks: Various hardware and software necessary to build a functional network, including routers, switches, firewalls, hubs, wiring, and how TCP/IP packets flow through the system.
- Programming Methodology: Necessary computer languages, basic principles, formulas, syntax, and documentation practices.
- Architecture and topology of software, hardware, networks, and telecommunications systems.
- Principles, methods and procedures for installing, integrating, and optimizing information systems components.
- Developments and new applications of information technology (hardware, software, telecommunications), and emerging technologies.
- Systems life cycle management concepts.

- Principles, methods and tools for quality assurance and control, including IT metrics methods and concepts.
- Specification Assessment: Principles, methods, and tools used in managing requirements.

SKILLS AND ABILITIES IN

- Accuracy: Paying attention to detail in dealing with numbers, words, and ideas.
- Information Organization: Finding ways to structure or classify multiple pieces of information.
- Critical Thinking: Using logic and analysis to identify the strengths and weaknesses of different approaches.
- Reading Comprehension: Understanding written sentences and paragraphs in work documents.
- Service Orientation: Actively looking for ways to help people.
- Operations Analysis: Analyzing needs and product requirements to create a design.
- Active Learning: Working with new material or information to grasp its implications.
- Functional Supervision: Motivating, developing, and directing people as they work.
- Active Listening: Listening to what others are saying and asking questions as appropriate.
- Complex Problem Solving: Identifying problems and reviewing related information to develop and evaluate options and implement solutions.
- Cooperation: Establishing and maintaining positive working relationships with those contacted in the course of work.
- Written Expression: Communicating information and ideas in writing so others will understand.
- Database Development: Programming the indexing, storing, and retrieving documents.
- Teaching: Conveying new concepts and confirming comprehension by listener.
- Judgment and Decision Making: Weighing the relative costs / benefits of a potential action.
- System Perception: Discerning when important changes have occurred or likely will in a system.
- System Evaluation: Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
- Systems Analysis: Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Information Technology Customer Support: Knowing and demonstrating enough hands-on customer data tools support to effectively provide additional support and lead a technical support team.
- Management of Personnel Resources: Motivating, developing, and directing people as they work, identifying the best people for the job.
- Management of Material Resources: Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
- Technical Reasoning: Interpreting an extensive variety of technical instructions in mathematical or diagram form and dealing with several abstract and concrete variables.

GUIDANCE RECEIVED

Priorities and Policies
Organizational priorities and policies, along with professional standards and best practices, guide decisions and direction or advice given to others. Typically makes recommendations to superiors after considering various alternatives. Proactively addresses needed changes to policies, methods and procedures and obtains approval.

CONTACTS

Internally, this position regularly interacts with all levels of employees, police and fire staff, as well as department employees and IT Staff. Externally, it regularly engages with vendors and support agencies.

EQUIPMENT AND PROPERTY

Equipment utilized by this position may include but is not limited to: Multi-line telephone, fax, copier, scanner, computer, printer, calculator, and/or a vehicle.

PHYSICAL DEMANDS

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.*

The employee is constantly required to drive a vehicle, grasp, kneel, listen, see, sit, stand, stoop, talk, and walk. Frequently, s/he is required to balance, carry, lift up to 25 pounds, push or pull, and reach. Occasionally, s/he is required to climb, crawl, and lift up to 50 pounds.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.*

The employee is constantly exposed to dirty environment. Frequently, s/he is exposed to electrical hazards, stress, noise, and moving mechanical parts. Occasionally, s/he may encounter confining work spaces, extreme temperature or weather conditions, and air contamination. Rarely, s/he may encounter high precarious work places. The noise level in the work environment usually is Moderate. This job requires the employee to perform duties or make decisions directly affecting the safety of others.

This individual operates in the Communications shop located on the Briery complex and works in and out of vehicles, ladders, weather signal and radio communications towers. S/he drives to sites to support them often.

* Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Note: A class specification is a general listing of duties, responsibilities, knowledge, skills, and abilities required of an incumbent assigned to a particular class of work. There may be one or multiple positions assigned to a single classification; therefore, the class specification lists those work attributes that are common to every incumbent in the class.