

**CLASS SPECIFICATION**  
**Computer-Aided Dispatch Software Engineer**

FLSA Status: Exempt  
Union Representation: Nonrepresented

**GENERAL PURPOSE**

Under direction, performs a variety of complex analytical information system engineering duties that maintain, enhance and expand the functionality of the City's computer-aided dispatch (CAD) system which supports the consolidated 911 system for all emergency response systems in Multnomah County; and performs related duties as assigned.

**DISTINGUISHING CHARACTERISTICS**

The class provides from advanced professional journey-level to highly specialized expert support to the real-time CAD system. Incumbents in this class work independently, as a team member or project leader to assess CAD user needs and design software enhancements that meet current and future needs.

**ESSENTIAL DUTIES AND RESPONSIBILITIES**

Any one position in this class may not perform all the duties listed below, nor do the listed examples of duties include all similar and related duties that may be assigned to this class.

1. Interviews and works with vendors, users and BOEC managers and user agencies to analyze the operational needs of the 911 system, requiring highly technical assessment of complex, ambiguous and conflicting software architecture issues.
2. Recommends and develops CAD software solutions to complement and enhance system functionality; develops proofs-of-concept prototypes of software component technology.
3. Provides software engineering to ensure the CAD system maintains connectivity with new technologies introduced by user agencies/organizations in the county; designs scenarios for system interface testing; provides expert systems input to disaster recovery plans.
4. Provides advice, mentoring and training on the CAD architecture.
5. Maintains and administers software and system maintenance agreement with vendor
6. Prepares a variety of written technical records, documentation and reports.
7. Responds to calls to work during emergencies.
8. Carries a pager, cell phone and laptop after work hours when on rotational on-call assignments.

## MINIMUM QUALIFICATIONS

### **Knowledge of:**

1. Principles, theory and methods of systems analysis/design, programming and software engineering/system integration.
2. Current engineering processes, software engineering standards, technology adoption and process improvement.
3. The City's CAD internals and operating systems and the resultant capabilities and limitations of a CAD system.
4. Specific hardware and programming functionalities such as , COBOL, ODDBOL, DEC C, the message switch that underlies the Computer-Aided Dispatch system, and associated data communications routines.
5. Dispatch operations in a combined (police, fire, emergency medical) communications center.
6. The interrelationship among the CAD system, the 800 MHz radio system and Qwest/Nortel telephone switches, Vesta computer telephony integration system, law enforcement data systems, dispatch map systems and user agencies information systems.

### **Ability to:**

1. Design software and systems integration with demanding attributes, including real-time, fault-tolerant and high security systems.
2. Create and implement short and long term strategies for ensuring the CAD system meets public safety operations needs within user area.
3. Develop software specifications and interfaces; conduct formal modeling of systems; conduct analysis of system quality attributes.
4. Perform process analyses and reach sound, logical conclusions regarding user needs and operational requirements; troubleshoot and resolve complex systems problems.
5. Interact effectively and maintain good working relationships with software vendors, CAD users, bureau management staff, and user agency technical staff.
6. Prepare accurate, clear technical reports, documentation and records.
7. Keep technical skills current to meet continuing CAD software engineering assignments.
8. Work within a high stress public safety dispatch environment where the system operates continuously, cannot fail and employee's actions affect the outcome of crisis situations.

**Training and Experience:**

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from a four-year college or university with a major in computer science, management information systems or a closely related field; and at least six years of progressively responsible and complex CAD system experience; or an equivalent combination of training and experience.

**Licenses; Certificates; Special Requirements:**

Persons in these positions must pass an extensive background investigation.

**PHYSICAL AND MENTAL DEMANDS**

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depends, in part, on the specific requirements for the job, the limitations related to disability and the ability of the hiring bureau to accommodate the limitation.

---

---

**Class History:**

Adopted: 07-01-02 (Class created as a result of Nonrepresented Classification & Compensation Study, 2000-2002.)

Revised: 11-06-02 (Included additional information to more clearly define the class)

June 2009 - Change Job Class number from 7502 to 30000602, due to system change.