

INFORMATION SYSTEMS (IS) SYSTEMS DEVELOPMENT SERVICES

I. DEFINITIONS

A. Identifying the Correct Job title

This section defines duties performed by positions appropriately included in this job family.

No specific definitions are provided for the IS Comprehensive Services job titles because these positions spend no more than 50% of their time on duties in any other single professional IS Data Services, IS Network Services, IS Systems Development Services, IS Technical Services, or IS Business Automation job title, and more than 50% of their time on a combination of duties from two or more of these IS job titles.

IS Systems Development Services Job Family

The Application and System Development positions are those responsible for the planning, development, implementation, upgrade, and support of software applications. Position types include application analysts, application designers, application developers, software programmers, software quality assurance staff, project managers/leaders, software tool specialists, software development methodology experts, software package technical experts, and GIS application specialists. Staff occupying positions in this family have the training and experience to serve the operational, information, knowledge, and analytical application needs of the agency business areas.

Positions which spend the majority of their time (50% or more) on one or more of the following duties are appropriately included in the IS Systems Development Services job titles.

- 1) Work with customers to assess the scope and objectives, return on investment (ROI), risk, and budget for IS application efforts.
- 2) Determine application feasibility from technical perspectives.
- 3) Develop and evaluate application alternatives that solve the needs of the business area or agency.
- 4) Assist with the definition of requirements and the preparation of bid documents for the acquisition of applications or application development services (e.g. contract programmers). Assist with the evaluation of responses.
- 5) Discover, analyze, organize and document application functional and data requirements.
- 6) Incorporate information security policies, principles and practices in application requirements.
- 7) Design user interfaces for applications.
- 8) Model and document objects, data and processes related to application development.
- 9) Design software components and develop application prototypes.
- 10) Build and debug software components using a variety of programming languages, professional tools, and integrated development environments.
- 11) Follow software development life cycle methodologies and practices.
- 12) Develop scripts to execute software components in batch mode.
- 13) Document applications for various audiences, including other IS developers, operations staff, data and network administrators, application users, and application trainers.
- 14) Develop software testing plans and conduct software tests from components to entire systems.

- 15) Create and/or modify software and application designs to improve performance, security, and reliability of applications when in use.
- 16) Develop technical knowledge about the software and data structures delivered with purchased applications.
- 17) Customize purchased applications to provide functionally not originally provided by the package vendor.
- 18) Plan, monitor, and control the IS project budget and work activities on projects for the development of applications or the acquisition and installation of purchased applications.
- 19) Develop one-time and reusable applications to report and summarize application data.
- 20) Develop procedures and application code to integrate two or more applications.
- 21) Develop and implement procedures to manage software repositories with consistency and quality.
- 22) Design, develop, and implement application architectures, which define the interrelations between individual applications and the infrastructure that supports them.
- 23) Assist with training on agency applications for business area experts and program area liaisons, helping the business side understand applications and set training priorities.
- 24) Study, develop, recommend, and support application development tools, standards, policies and procedures, and methodologies.
- 25) Provide requirements for the selection of useful development tools.
- 26) Design and develop applications using GIS data.
- 27) Estimate the costs of application -related work on IS projects.
- 28) Troubleshoot, identify, and resolve production and development application problems. Patch applications when necessary.
- 29) Study the impact of proposed business changes on the business-area applications.
- 30) Lead teams of application professionals, determine resources and skill needs, and assign tasks.
- 31) Participate in statewide planning for application technology.
- 32) Assess and report status of application projects.
- 33) Analyze technical strengths and weaknesses of applications that are in use and those under consideration for purchase.
- 34) Facilitate application requirements gathering sessions.
- 35) Plan and test upgrades to purchased software.
- 36) Develop data extracts to populate other data access sources (like data warehouses and datamarts).
- 37) Develop data extracts and data conversion routines to transmit data to outside parties and other application systems.
- 38) Interface with managers and management teams presenting information about new or changed applications, potential new business opportunities in technical advances, and impacts on business rules.

Positions appropriately classified in the IS Systems Development Services job titles may perform some of the following duties, but would not spend the majority of their time on these duties:

- 1) Use applications to enter or retrieve information for the business area or agency.
- 2) Provide information and requirements for the application.
- 3) Establish valid data values and valid business rules for applications.
- 4) Test applications as a representative of the business area or agency to determine that business requirements are met.
- 5) Approve the application's readiness for production use.
- 6) Resolve business and policy issues related to the development and implementation of applications.
- 7) Use existing application data structures and reporting tools to answer business questions.
- 8) Act as an application owner by approving requests for access to the application and its data, defining application usage policies and roles, identifying applications quality issues, requesting application enhancements, prioritizing work requests for IS application projects.

- 9) Review and approve feasibility studies, risk assessments, impact assessments, technical specifications and designs as a representative of the business area or agency.
- 10) Use “off-the-shelf” applications and/or non-professional development tools to manage data used in one’s own job or business area.
- 11) Audit applications and their use to uncover possible fraud and security breaches.
- 12) Perform data and database administration.
- 13) Install, support and administer networks and servers.
- 14) Administer security.
- 15) Perform data Center operation.
- 16) Provide general help on the use of computing services, tools, and applications.
- 17) Install and support hardware, operating systems, and infrastructure needed to develop or run applications.
- 18) Install software.

B. Levels

IS PROFESSIONAL

This job title is used as an entry progressing to a development level for professional IS positions. Work is performed under close progressing to limited supervision. Although this is the entry-developmental level for this series, knowledge of fundamental IS concepts, principles and practices must have been acquired before appointment into this job title; the focus is on learning the procedures, practices, techniques and technology for the assigned specialized area; and assignments are narrow in scope. As the employee progresses, s/he continues to develop knowledge of the specialized area and the associated IS concepts, principles, practices, and techniques.

IS SENIOR

Positions at this level work under general supervision. The technical work performed by a position at this level may be reviewed by the position's assigned supervisor for agreement with established technical direction, policies and standards. This is the full performance level, and it is the level that an employee in this series can reasonably expect to attain. An employee at this level has acquired a broad knowledge of general IS concepts, principles, practices and techniques **and** broad knowledge of the job family and job title to which the position is assigned. Positions at this level may lead positions at the Professional and Senior level in the completion of projects and work assignments. Positions at this level may support the activities of IS Specialists, Consultants, and/or Administrators and may work under the day-to-day direction of IS Specialists, Consultants, and/or Administrators.

C. Job title Definitions

IS SYSTEMS DEVELOPMENT SERVICES PROFESSIONAL

This job title is used as an entry progressing to a development level for professional IS Systems Development Services positions. Work is performed under close progressing to limited supervision. Positions in this job title perform professional IS work which supports the overall development, implementation, testing and maintenance of applications. Systems Development Services provided covers a variety of systems including Geographic Information Systems (GIS). For a majority of the time, positions in this job title perform work related to one or more of the phases in the Systems Development Life Cycle. Positions spend the majority of their time performing any combination of the following duties:

- Primarily responsible for coding computer programs in computer language/s for IS applications from detailed specifications.

- Design user interfaces (screens, windows, reports, etc.).
- Prepare documentation.
- Prepare test data and test programs.
- Participate in systems development analysis and design phases.
- Participate in proposing design and system alternatives in response to customer requests.
- Analyze business requirements for the development and/or enhancement of computer programs.
- Participate in proposing alternates in response to customer requests.
- Provide regular project status reports to customer.

IS SYSTEMS DEVELOPMENT SERVICES SENIOR

Positions in this job title perform professional IS work which supports the overall development, implementation, testing and maintenance of applications. Systems Development Services provided covers a variety of systems including Geographic Information Systems (GIS). For a majority of the time, positions in this job title perform work related to one or more of the phases in the Systems Development Life Cycle. Senior level positions spend the majority of their time performing any combination of the following duties:

- Analyze business requirements for the development and/or enhancement of automated systems.
- Develop and code complex programs.
- Positions may receive guidance from an IS Specialist, Project Leader Specialist, IS Consultant, Project Manager, or IS Supervisor.
- Prepare detailed program specifications for systems.
- Work with customers to define and develop applications to support business processes.
- Perform detailed feasibility studies.
- Propose design and system alternatives in response to customer requests.
- Prepare program specifications for systems.
- Develop system test plans.
- Coordinate system testing.
- Complete systems cost/benefit analysis for management.
- Coordinate systems installation.
- Conduct data analysis, including spatial data.
- Conduct integration tasks, including spatial data.
- Lead intra-agency development projects or portions of a development project.
- Prepare project plans.
- Oversee team assignments.
- Assist IS Systems Development Services Specialists and/or Consultants with their responsibilities.

This job title includes, but is not limited to, the following representative positions or job types. Positions do not need to exactly match one of these representative positions in order to be appropriately classified at this level.

Representative Positions

IS Applications Programmer - Positions are primarily responsible for coding computer programs in computer language/s for IS applications. These positions develop new computer programs, modify existing programs, prepare documentation for, test and maintain programs and may participate in systems development analysis and design phases. Positions spend more than 50% of their time coding programs for automated systems from detailed specifications. At the senior

level, positions in this job type will, for the majority of time, develop and code complex programs. Some positions assigned to ICASE projects will be involved in full life-cycle projects.

IS Geographic Applications Analyst - Positions work with customers to define and develop GIS applications to support business processes. Positions are primarily responsible for analyzing, designing, organizing, documenting and monitoring standards, structures and procedures for the development of new GIS automated systems and enhancement of existing automated systems; perform detailed feasibility studies, which may include preparing program specifications for systems, complete systems cost/benefit analysis, and coordinate systems installation; and conduct spatial data analysis, image processing, and spatial data integration tasks.

IS Programmer/Analyst - Positions perform a combination of analysis and coding duties. These positions develop specifications and participate in analyzing requests from customers for design and system alternatives; and develop, code, document, test, and maintain applications software. Positions in this job type spend less than 50% of their time coding programs for automated systems from detailed specifications.

IS Project Leader - Positions lead intra-agency development projects or portions of a development project. Positions prepare project plans, oversee team assignments and provide regular project status reports to customer. Teams led by positions in this job type are made up primarily of programmer/analysts and/or systems analysts/designers. Projects may be led one at a time or concurrently dependent upon project duration and timelines, and may include GIS. Positions may receive guidance from an IS Specialist, Project Leader Specialist, IS Consultant, Project Manager or IS supervisor.

IS Systems Analyst/Designer - Positions primarily are responsible for analyzing, designing, organizing, documenting and monitoring standards, structures and procedures for the development of new automated systems and enhancement of existing automated systems; and preparing detailed program specifications for systems, complete systems cost/benefit analysis for management and coordinate systems installation. Positions in this job type will spend less than 25% of their time coding programs for automated systems from detailed specifications.

II. QUALIFICATIONS

The qualifications required for these positions will be determined at the time of recruitment.