INFORMATION SYSTEMS SPECIALIST 6 1486

SERIES DESCRIPTION

The INFORMATION SYSTEMS SPECIALIST (ISS) classification series has eight levels that describe technical and professional non-supervisory positions working in Information Systems. The work in this series includes responsibility for planning, coordination, analysis and technical support functions. Positions solve problems and accomplish work processes through information systems and technology.

When deciding whether a position is properly allocated to the ISS series, the paramount considerations are the primary purpose for the position and the recruitment criteria. The knowledge of computers and information systems is an increasingly important part of many occupational fields. In most instances, the computer knowledge is secondary to the knowledge and skills associated with the occupational field. The computer is a tool to facilitate accomplishing the work. In this case, the position does not belong in the ISS Series.

There are three components to these Class Specifications: **Infrastructure Functions**, **Organizational Functions**, and **Complexity Levels**.

1. Infrastructure Functions

Software includes both applications and operating software;
Hardware refers to the physical components (PCs, servers, mainframes, peripherals, etc.);
Communications provides the connections that link systems and includes data, voice, image and video;
Data is concerned with data bases and associated master files.

A position is either a Specialist or a Generalist, depending on how many of these Infrastructure Functions are covered by the job. A Specialist typically spends 70% or more of work time on one or two of the infrastructure functions. The Generalist divides work time more or less evenly among three or four infrastructure functions. The series describes both Specialists and Generalists at most levels.

2. Organizational Functions

Customer Assistance (CA) is user assistance, systems maintenance and fixing problems of all sizes;
Operations (OP) is the day to day functions and includes such things as installation, performance monitoring, access, daily security, back-up, scheduling, inventory management and processing orders;
Construction (CO) refers to new systems and features and covers major remodels and enhancements as well as new systems; and
Planning (PL) is strategic, long term planning. This is not the regular, on-going planning required in many jobs. This is strategic planning as a separate primary job function and addresses issues such as resource utilization, disaster planning, new technologies and acquisition strategies, change control management, system performance, and overall security.

Both Specialists and Generalists work in one or more of these organizational functions.

3. Complexity Levels

There are varying levels of complexity connected with the work in this series. Complexity levels relate to the tasks (the work being done) and are based on the factors that influence those particular tasks. These factors include the size, scope and criticality of the environment, the diversity of systems, degree of independence, available guidelines, etc. Please refer to the allocation guide for more detailed information regarding complexity levels and scope.

GENERAL DESCRIPTION OF CLASS

The ISS 6 analyzes, plans, develops, integrates, implements and coordinates projects and activities that support operations, maintenance, installation and construction of information systems. This is the Senior Professional level for the series.

DISTINGUISHING FEATURES

This is the sixth level in an eight level series. It covers both Specialists and Generalists.

The Specialist at this level differs from the next lower level by the addition of level 3 Construction which involves projects that introduce new technology or new businesses and where there are conflicting needs and significant compatibility issues. These projects involve multiple vendors and require interjurisdictional cooperation.

The lack of level 3 Strategic Planning distinguishes this level from the next higher level. Planning at level 3 includes establishing standards, recommending changes in business processes for effective utilization of the system resources, and reviewing construction for conformance to overall system standards. It deals with an environment with multiple remote locations a mixture of standards and a high level of expansion or change.

The Generalist at this level differs from the next lower level by the addition of level 3 Customer Assistance and Operations. Complexity Level 3 in these organizational areas involves establishing processes and procedures for others to use, consulting with and advising other IS staff and dealing with the most critical problems.

The lack of level 3 Construction and level 2 Planning distinguishes this Generalist from the next higher level. At the higher level, the Generalist deals with construction projects that introduce new technology or address new business requirements, where there are conflicting needs and significant compatibility issues, involve multiple vendors and require interjurisdictional cooperation; AND participates in mid-level strategic planning for resource utilization, disaster planning, new technologies and acquisition strategies, change control management, system performance, and overall security.

RELATIONSHIPS WITH OTHERS

The ISS 6 has daily contact with managers, technical and professional IS staff and a wide range of system users to analyze operational or business needs and system requirements and to provide consultation and advice. There is regular contact with other agencies or jurisdictions and vendors to coordinate projects, negotiate contracts and resolve conflicts. The ISS 6 has frequent contact with vendors to evaluate modified or new technology and with contracted personnel to provide oversight, exchange information, analyze recommendations regarding systems or solve problems.

SUPERVISION RECEIVED

The ISS 6 is assigned work in terms of program or project objectives, priorities and timelines. Consults with supervisor to resolve policy questions and problems in coordinating activities with other programs. Typically, work is subject to technical and administrative control in which review is made of program or project accomplishments and adherence to policies, directives and desired results.

Standard models, directives or manuals govern the work but judgement must be used in selecting the guides. Interpretation and adaptation of controlling precedents is required and, within the framework of existing precedents, the ISS 6 adapts or improves methods or procedures to fit specific issues and projects.

EXAMPLES OF DUTIES AND ACCOUNTABILITIES

The duties and accountabilities listed are not inclusive, but characteristic of the type and level of work associated with this class. Individual positions may be assigned all or some combination of the duties described as well as other related duties.

SPECIALIST: CUSTOMER ASSISTANCE, OPERATIONS, CONSTRUCTION - COMPLEXITY LEVEL 3

This Specialist works 70% of the time in one or two infrastructure functions (Communications, Software, Hardware or Data) and typically performs Customer Assistance, Operations and Construction at complexity level 3, as described below.

1. Customer Assistance (help use & fix) - Complexity Level 3

Diagnoses user problems and questions, addressing the most complex problems for systems most critical to the state. (Critical means those systems with significant time constraints, such as Payroll systems, systems tracking revenues, systems meeting regulatory requirements or systems dealing with public safety issues.) Problem solving usually requires a high level of coordination with other IS staff and multiple vendors, and involves situations requiring conflict resolution.

As the expert, helps other IS staff solve problems and deal with major system crashes. Establishes procedures for diagnosing and solving problems. Develops formal training for assigned infrastructure function(s).

The typical system environment is diverse, with a mixture of data base management systems and hardware devices and standards. Usually deals with distributed data, multiple remote locations, multiple jurisdictions and a high level of expansion or change.

2. Operations (day-to-day) - Complexity Level 3

Tasks in this Organizational Function relate to keeping the operations going on a day-to-day basis. This includes installation, performance monitoring, access, security, back-ups, scheduling, inventory management and processing orders.

Plans and schedules installations considering timing, version compatibility and other factors. Installations typically involve products new to the industry or significant changes, such as overall system hardware upgrades or those that require creative network tuning.

Analyzes system performance and addresses performance problems. Evaluates costs, specifications, and organizational policies to recommend system performance tuning. Resolves resource competition issues.

The typical environment is diverse with multiple vendors, has multiple sites, distributed needs within the agency and multiple entities in the work flow. Typically, it has relational databases, multiple distributed databases, and must maintain relational integrity of the data bases, considering constraints, linked tables, and consistency. Security is usually at the data level.

3. Construction (new) - Complexity Level 3

Conducts business analysis and research for large or unusual projects and for projects introducing new technology or new business processes. Does business process modeling and formal data modeling requiring consideration of overall system performance. Projects involve a high level of coordination and there are usually conflicting needs and significant compatibility issues. Builds implementation plans which often involve multiple vendors, multiple jurisdictions, and cross agency cooperation.

Completes overall hardware system upgrades and codes extensions to communications software (such as Firewall, Enterprise DBMS, or system management software). Normalizes data, updates the data dictionary, and reviews other staff work for conformance with established standards. Develops bid specifications and makes high level recommendations which include costs, performance factors,

and vendor selection.

Construction environment typically has multiple remote locations, a mixture of IS standards and significant expansion or change. This level of data construction deals with distributed data, typically read-only basis, not remote input and manipulation.

GENERALIST: CUSTOMER ASSISTANCE, OPERATIONS - COMPLEXITY LEVEL 3, CONSTRUCTION - COMPLEXITY LEVEL 2

The Generalist works in three or four infrastructure functions (Communications, Software, Hardware or Data) and typically does Customer Assistance and Operations at complexity level 3 and Construction at complexity level 2, as described below:

1. Customer Assistance (help use & fix) - Complexity Level 3

Diagnoses user problems and questions, addressing the most complex problems for systems most critical to the state. (Critical means systems with significant time constraints, such as Payroll systems, systems tracking revenues, systems meeting regulatory requirements or systems dealing with public safety issues.) Problem solving usually requires a high level of coordination with other IS staff and multiple vendors, and involves situations requiring conflict resolution.

As the expert, helps other IS staff solve problems and deal with major system crashes. Establishes procedures for diagnosing and solving problems. Develops formal training for assigned infrastructure functions.

The typical system environment is diverse, with a mixture of data base management systems and hardware devices or standards. Usually deals with distributed data, multiple remote locations, multiple jurisdictions and a high level of expansion or change.

The Generalist answers questions and solves problems related to at least three of the four infrastructure functions.

2. Operations (day-to-day) - Complexity Level 3

Tasks in this Organizational Function relate to keeping the operations going on a day-to-day basis. This includes installation, performance monitoring, access, security, back-ups, scheduling, inventory management and processing orders.

Plans and schedules installations considering timing, version compatibility and other factors. Installations typically involve products new to the industry or significant changes, such as overall system hardware upgrades or those that require creative network tuning.

Analyzes system performance and addresses performance problems. Evaluates costs, specifications, and organizational policies to recommend system performance tuning. Resolves resource competition issues.

The typical environment is diverse with multiple vendors, has multiple sites, distributed needs within the agency and multiple entities in the work flow. Typically, it has relational databases, multiple distributed databases, and must maintain relational integrity of the data bases, considering constraints, linked tables, and consistency. Security is usually at the data level.

3. Construction (new) - Complexity Level 2

Conducts business analysis and research on significant portions of a large system or on a new process within an established business. Identifies and deals with compatibility issues. Addresses a variety of users and deals with a mixture of standards for all assigned infrastructure functions and a moderate level of change. Negotiates with vendors and chooses vendor from existing contracts. Builds implementation plan. Writes documentation. For data projects, uses data dictionary and establishes standards and precedents for data base design.

Environment typically has a moderate number and mixture of devices, remote locations and a moderate level of change. Projects often involve a variety of users and a mixture of standards for the infrastructure functions and require cross-agency or cross-jurisdiction cooperation.

KNOWLEDGE AND SKILLS (KS)

SPECIALIST positions require the following Knowledge and Skills in one or two of the four infrastructure specialities

Extensive Knowledge of:

- systems components, capabilities and interrelationships of infrastructure speciality(ies).
- data collection techniques, feasibility study methods and cost/benefit analysis procedures.
- system performance monitoring and tuning techniques.
- project planning and coordination.
- business analysis and research.
- testing and troubleshooting techniques.
- operations and business of the agency.
- resources and references for state and federal law and administrative rules specific to the program area.
- state purchasing procedures.

General Knowledge of:

- operations and business of the organization.
- tools of user needs analysis.
- product testing and quality assurance.
- vendor relations and coordination.
- statistical analysis to interpret results.
- current trends, technological changes and developments in infrastructure specialty(ies).

Skill:

- managing information system projects (conceptual design phas through testing and implementation).
- solving system performance problems.
- establishing procedures for diagnosing and solving problems.
- coordinating problem solving and resolving resource competition issues.
- developing formal training in infrastructure specialty(ies).
- evaluating costs, specification and organizational policies to recommend performance tuning.
- analyzing and proposing system development tasks.
- in leadership and employee development.
- recommending modifications or enhancements to systems and policies.
- providing guidance and technical expertise to lower level professional and technical staff.
- developing formal training.

Some Specialist positions may also require one or more of the following:

Extensive Knowledge of:

- data base management systems and utilities.
- file access methods.
- programming languages.
- information system analysis, design and data management concepts.
- information systems operating software and operating systems language.
- hardware configuration.
- standards and precedents for data design and formatting.

General Knowledge of:

- Requests for Proposals (RFP) development.
- contract management.

- network design.
- data security systems.
- information systems architecture.

GENERALIST positions require the following Knowledge and Skills in at least three of the four Infrastructure specialties.

Extensive knowledge of:

- IS equipment, technology, terminology, methods and procedures.
- systems components, capabilities and interrelationships.
- performance tuning and monitoring techniques.
- project planning and coordination.
- testing and troubleshooting techniques.
- State purchasing procedures.

General knowledge of:

- product testing and quality assurance.
- vendor relations and coordination.
- hardware and software configuration.

Basic Knowledge of:

- current trends, technological changes and developments.
- network configuration.

Skill:

- solving system performance problems.
- establishing procedures for diagnosing and solving problems.
- coordinating problem solving and resolving resource issues and conflicts.

Some Generalist positions may also require one or more of the following:

Extensive Knowledge of:

- Data communications hardware, software and equipment components (e.g., modems, multiplexors, lines, etc.).

Skill:

- configuring and assembling computer hardware, software and communication equipment.
- developing formal training.

NOTE: The KNOWLEDGE and SKILLS are required for initial consideration. Some duties performed by positions in this class may require different KS's. No attempt is made to describe every KS required for **all** positions in this class. Additional KS requirements will be explained on the recruiting announcement.

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Revised

STATE OF OREGON
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