INFORMATION SYSTEMS SPECIALIST 7 1487

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 THE CLASS

The ISS 7 provides expertise and leadership to analyze, plan, develop, integrate, implement and coordinate the operations, maintenance, installation and construction of information systems. This is the Advanced Professional level for the series.

DISTINGUISHING FEATURES

This is the seventh 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 Strategic Planning. This is the highest level of Strategic planning (except in Software) and deals with an environment with multiple remote locations, a mixture of standards and a high level of expansion or change. Planning at level 3 involves establishing standards, recommending changes in business processes for effective utilization of the system resources and reviewing new construction for conformance to overall system standards.

It is distinguished from the next higher level by the lack of the highest levels (level 4) of Construction in Data and Strategic Planning in Software. Level 4 Data Construction may address technology new to the State, distributed data with remote input and manipulation and a mixed environment of database management systems. This level decides what tools to use in constructing new database structures. Level 4 Software Planning involves Strategic Planning in an environment that integrates multiple systems from multiple organizations (State, County, Federal, Private) and assessment of technology new to the industry.

The Generalist at this level differs from the next lower level by the addition of level 3 Construction and level 2 Planning. At this level, the Generalist deals with construction projects that introduce new technology or new business requirements, where there are conflicting needs and significant compatibility issues, and which 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.

The lack of level 4 Data Construction and the lack of level 3 Strategic Planning distinguishes this Generalist from the next higher level. Level 4 Data Construction may address technology new to the State, distributed data with remote input and manipulation and a mixed environment of database management systems. This level decides what tools to use in constructing new database structures. Planning at level 3 involves establishing standards, recommending changes in business processes for effective utilization of the system resources and reviewing new construction for conformance to overall system standards.

RELATIONSHIP WITH OTHERS

The ISS 7 has daily contact with management, professional IS staff and a wide range of agency and other jurisdictions staff to provide expert advise and consultation in planning, development, implementation and coordination for the operations, maintenance, installation and construction of information systems on a regular basis. The ISS 7 has frequent contact with vendors to assess new technology and with contracted personnel to provide oversight, negotiate contract modifications, and analyze compliance with contract specifications.

SUPERVISION RECEIVED

The ISS 7 operates under managerial direction. Consults with supervisor to establish overall program or project objectives. The ISS 7 works with substantial latitude for unreviewed action and decisions and informs the supervisor on progress, potentially controversial issues or far-reaching implications. Work review is on completion from an overall standpoint in terms of feasibility, compatibility with other units and effectiveness in

meeting expected results.

Technical and administrative guides, policies and precedents provide guidance. These are general in nature and, in the most significant areas of work, have only a partial or indirect application. The ISS 7 must interpret and apply these guidelines on the basis of specialized training and experience. The ISS 7 devises and applies new approaches and previously unused methods within existing basic concepts and theories.

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, PLANNING - 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, Construction and Planning 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 generally 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.

4. Planning (Strategic) - Complexity Level 3

Responsible for high-level strategic planning, considering issues such as resource utilization, acquisition planning and new technologies, disaster planning, overall system performance, and security on a strategic basis.

Addresses resource utilization issues where there are distributed needs within the agency and competition for resources. Recommends changes in business operations to effectively utilize system resources. Considers system features, configuration and compatibility issues. Establishes standards for assigned infrastructure functions. If working in Data, decides overall issues of data sharing, data location, usage, security, integrity, and flexibility and makes resource allocation decisions. Establishes and enforces metadata standards. Reviews and approves logical data models for new projects for conformance to overall strategic plan and physical design standards. Conducts training in data modeling and design.

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

This Generalist works in three or four infrastructure functions (Communications, Software, Hardware or Data) and typically performs Customer Assistance, Operations, and Construction at complexity level 3 and Strategic Planning at 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 those systems with significant time constraints, such as Payroll systems, those tracking revenues, meeting regulatory requirements or 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. May physically repair hardware. 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 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 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.

4. Planning (Strategic) - Complexity Level 2

Participates in mid-level strategic planning, considering issues such as resource utilization, disaster planning, new technologies and acquisition strategies, change control management, system performance, and overall security on a strategic basis. At this level, the work requires a broad business perspective and identification of opportunities where systems could provide better benefits to the organization. In disaster planning, addresses legal mandates for processing and considers other entities relying on the systems' operations.

Environment contains a variety of software, hardware, communications and data base management systems and involves multiple vendors. Generally must consider external users from other agencies or public access and dial-in access. These factors affect the strategic enterprise modeling done at this level. This Specialist evaluates and recommends new platforms, systems and utilities. Plans for future system performance in light of the impact caused by exceeding system capacity.

KNOWLEDGE AND SKILLS (KS)

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

Extensive Knowledge of:

- infrastructure specialty(ies) and the interrelationship of information management systems.
- operations and business of the organization.
- project administration methods, principles, techniques and practices.
- trends, technological changes and developments in IS.

General Knowledge of:

- theories, principles and practices of Information Systems Technology.
- information systems architecture.

Basic Knowledge of:

- business systems and organizational structures.
- contracting for IS services, including negotiation and performance monitoring.

Skill:

- administering and managing large scale, multi-system projects including directing and motivating internal staff, contractors and other participants.
- identifying the scope and complexity of a project and assigning segments of that project to others.
- establishing controls and security measures.
- reviewing and revising agreements or contracts.
- developing long and short range plans to meet established goals.
- developing policies and procedures.
- analyzing organizational needs and implementing cost-effective solutions.
- providing professional and technical staff information, advice, training and assistance.

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

Extensive Knowledge of:

- the interrelationship of information management systems.
- operations and business of the organization.
- project administration methods, principles, techniques and practices.
- trends, technological changes and developments in IS.

General Knowledge of:

- theories, principles and practices of Information Systems Technology.
- information systems architecture.

Basic Knowledge of:

- business systems and organizational structures.
- contracting for IS services, including negotiation and performance monitoring.

Skill:

- administering and managing large scale, multi-system projects including directing and motivating internal staff, contractors and other participants.

- identifying the scope and complexity of a project and assigning segments of that project to others.
- establishing controls and security measures.
- reviewing and revising agreements or contracts.
- recommending policies and procedures.
- analyzing organizational needs and implementing cost-effective solutions.
- providing professional and technical staff information, advice, training and assistance.

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
Dept. of Administrative Services
Human Resource Services Division