

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 3 provides specialized support for one or two Infrastructure Functions (communications, software, hardware, or data). The ISS 3 operates, maintains, and installs systems, designs and constructs, or assists with constructing new systems or modifying and enhancing existing systems, and helps users do their work and solve system problems. This is the Advanced Technical or Professional Entry level for the series.

DISTINGUISHING FEATURES

This is the third level in an eight level series. It covers two different types of Specialists. There is no Generalist at this level.

The Specialist in Software or Software and one other Infrastructure Function differs from the lower level Specialist by working at complexity level 2 in Software Customer Assistance and Operations. This requires more in-depth analysis and independent decision making and involves a wide variety of applications and operating systems. This Specialist differs from the next higher level by the absence of level 2 Software Construction, which deals with new business processes, mixed system standards, compatibility issues and a variety of users. At complexity level 1, Construction normally involves established business processes, a single user group and an established software environment with few version or compatibility issues.

A Specialist who is not working in Software differs from the lower levels by working at complexity level 2 in Customer Assistance, Operations, and Construction. Complexity level 2 requires more in-depth analysis and independent decision making and involves integrated systems affecting significant numbers of users and requiring greater coordination of activities with others. For these infrastructure areas (Communications, Hardware or Data), construction duties at level 2 deal with larger or less routine projects, mixed standards, compatibility issues and a variety of users.

The lack of regular requirement for Strategic Planning or the lack of complexity level 3 Customer Assistance and Operation functions distinguishes the non-Software Specialist from the next higher level. Complexity level 3 Customer Assistance and Operations involves establishing processes and procedures for others to use, serving as consultant to other IS staff and dealing with the most critical problems.

RELATIONSHIPS WITH OTHERS

The ISS 3 has daily contact with technical staff and a wide range of system users to provide technical information and solve problems; with other Information Systems staff, vendors and other external entities to coordinate problem solving and ensure conformity of methods and practices. The ISS 3 has regular contact with users to discuss operational or business needs and system requirements, with staff throughout the organization to coordinate installation or construction projects, and with vendors to exchange information on existing or new technology.

SUPERVISION RECEIVED

The ISS 3 works under general supervision, according to scheduled activities, as problems come up or in terms of general project objectives. Overall performance is reviewed for technical accuracy and conformance with standards.

Established guidelines for the job are contained in various operational manuals. Agency and unit policies, processes and procedures provide guidance.

GENERAL INFORMATION

Some ISS 3 positions may work evening or night shifts or, on occasion, extended or nonstandard work schedules.

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 - SOFTWARE: CUSTOMER ASSISTANCE, OPERATIONS - COMPLEXITY LEVEL 2
CONSTRUCTION - COMPLEXITY LEVEL 1**

This Specialist works 70% of the time in Software or Software and one other infrastructure function, and performs Customer Assistance and Operations at complexity level 2, and Construction at complexity level 1, as described below.

1. Customer Assistance (help use & fix) - Complexity Level 2

Answers both routine and unique questions from users and diagnoses problems. Typically deals with problems caused by software rather than operator error and those that are recurring or have widespread consequences. Fixes software.

Helps users and answers unusual or less common questions which may be referred from other IS staff or require on-site analysis or extensive dial-in diagnosis. Assesses situation and deals with implications to the overall system.

Contacts vendors and other external entities to coordinate problem solutions. Prioritizes problems and works with users, vendors and other parties to resolve conflicts., Tracks and reports progress. Assists users with reporting. May conduct both formal and informal training for assigned infrastructure(s). May physically repair hardware.

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

Installs software new to the agency or division and coordinates the changes with other systems or users affected by the installation. Modifies new software for version compatibility. Analyzes system performance for systems containing a variety of applications and operating systems. Resolves problems, including contacts with vendors.

Tracks operational and system changes in preparation for recovery needs. Addresses day-to-day security issues and may implement new or unique changes to system security (e.g. first time vendor dial-in). Processes orders for purchases not under contract or those that require a Request For Proposal. Manages inventory.

This level typically operates in a mixed environment with multiple hardware and application software standards. Normally there is a single operating system standard. May have mixed data bases and share data with other entities. Generally involves remote locations with no established backbone, a moderate level of expansion or change and a moderate number of devices.

3. Construction (new) - Complexity Level 1

Conducts business analysis and research for small or established projects, sections of large projects, or current business processes. Works with a single user group requiring limited coordination. Communication is normally with similar users working on standardized hardware with established security. The software environment is generally well established and requires few version or compatibility considerations.

SPECIALIST (NOT WORKING IN SOFTWARE): CUSTOMER ASSISTANCE, OPERATIONS, CONSTRUCTION - COMPLEXITY LEVEL 2

This Specialist works 70% of the time in one or two infrastructure functions other than Software (Communications, Hardware or Data), and performs Customer Assistance, Operations, and Construction at complexity level 2, as described below.

1. Customer Assistance (help use & fix) - Complexity Level 2

Helps users and answers unusual or less common questions which may be referred from other IS staff or require on-site analysis or extensive dial-in diagnosis. Typically deals with problems that are recurring or have widespread consequences and those that require actual system fixes rather than eliminating operator errors. Assesses situation and deals with implications to the overall system.

Contacts vendors and other external entities to coordinate problem solutions. Prioritizes problems and works with users, vendors and other parties to resolve conflicts. Tracks and reports progress. Assists users with reporting. May conduct both formal and informal training for assigned infrastructure(s). May physically repair hardware.

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

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.

Installations at this level often do not have precedents or established procedures to follow and could be the initial installation, requiring configuration modifications, testing and troubleshooting (for example, major hardware upgrades). Installations at this level usually require coordinating the changes with other systems or users affected by the installation. Writes installation documentation and maintains data dictionary.

Monitors performance of hardware data base or communications systems, and diagnoses and solves problems. Manages physical storage of data bases. Deals with version compatibility issues. Tracks operational and system changes in preparation for recovery needs. Addresses day-to-day security issues and may implement new or unique changes to system security (e.g., first time vendor dial-in). Processes orders for purchases not under contract or those that require a Request For Proposal. Manages inventory.

This level typically operates in a mixed environment with multiple hardware and applications software standards. Normally, there is a single operating system standard. May have mixed data bases and share data with other entities. Generally involves remote locations with no established backbone, a moderate level of expansion or change and a moderate number of devices.

3. Construction (new) - Complexity Level 2

Conducts research and needs assessments on larger or less common projects. Identifies and deals with compatibility issues. Chooses vendor from existing contracts. Builds implementation plan. Creates documentation. For data projects, uses data dictionary and may establish 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 function(s) and may require cross-agency or cross-jurisdiction cooperation.

KNOWLEDGE AND SKILLS (KS)

SPECIALIST (Software) positions require the following Knowledge and Skills in Software or Software and one other infrastructure (i.e., communications, hardware or data).

General Knowledge of:

- technologies, terminology, methods, and procedures for software and other infrastructure specialty.
- commonly used applications software (e.g., word processing, spread sheets, data bases, graphics, etc.).
- software diagnostic tools and troubleshooting techniques.
- programming and documentation principles and procedures.

Basic Knowledge of:

- information system analysis, design and data management concepts.
- information systems operating software and operating systems language.
- performance monitoring techniques.
- feasibility study and cost/benefit analysis methods.
- business analysis and research.

Skill:

- using common programming languages.
- writing documentation according to established standards.
- testing and debugging programs and systems.
- identifying user requirements.
- communicating technical concepts to users.
- installing and maintaining vendor supplied software.
- analyzing and diagnosing software problems and coordinating solutions.

SPECIALIST (not working in Software) positions require the following Knowledge and Skills in either Communications, Hardware or Data, or a combination of any two of these Infrastructure specialties.

General Knowledge of:

- equipment, technologies, terminology, methods, and procedures for infrastructure speciality(ies).
- performance tuning and monitoring techniques.
- needs assessment analysis.
- feasibility study and cost/benefit analysis methods.

Basic Knowledge of:

- project management methods and techniques.
- purchasing procedures.
- testing and troubleshooting techniques.

Skill:

- communicating technical concepts to users.
- installing and modifying hardware and data communications equipment.
- writing documentation according to established standards.
- analyzing and defining user requirements.

- writing technical reports and instructional manuals for operations and users.
- developing, coordinating or presenting staff training.
- evaluating proposed new system resources.

Some Specialist (Not Software) positions may also require one or more of the following:

General Knowledge of:

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

Basic Knowledge of:

- network design.
- hardware configuration.

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

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Dept. of Administrative Services
Human Resource Services Division