

**GS-35F-0119K - DESCRIPTION OF INFORMATION TECHNOLOGY
SERVICES AND PRICING**

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Price List for Option Two (2): Effective November 25, 2009 through November 24, 2014

Labor Category	GSA On-Site Rate
AIS Security Analyst	\$26.41
AIS Security Project Manager	\$38.51
AIS Security Senior Analyst	\$30.41
AIS Security Tech Asst	\$23.45
AIS Specialist	\$31.10
Applications Engineer	\$49.37
Computer Administrator	\$32.09
Computer Aide	\$16.14
Data Entry Operator	\$22.21
Database Analyst	\$51.84
Facilities Manager	\$40.49
Field Service Tech/Rep	\$33.58
Graphics Specialist	\$16.69
Internetworking Specialist	\$44.44
IT Subject Matter Specialist	\$23.20
Journeyman Analyst/Programmer	\$23.90
Journeyman Computer Operator	\$16.59
Junior Analyst/Programmer	\$19.55
Junior Computer Operator	\$14.41
Junior Data Entry Clerk	\$12.34
L/S Analyst Programmer	\$28.93
LAN Maintenance Tech	\$26.66
LAN Manager	\$36.29
LAN Tech L-1 (TNI)	\$36.54
Lead Computer Operator	\$32.09
Lead Programmer Analyst/Sr Tech Cons	\$51.34
Lead Senior Data Entry Clerk	\$14.41

Lead System Analyst/Project Leader	\$59.24
Microcomputer Applications Developer	\$37.03
Microcomputer Support Specialist	\$45.43
Multimedia Specialist	\$59.24
Network Analyst I	\$39.50
Network Analyst II	\$43.45
Network Analyst III	\$46.41
Operator System/Software Analyst Programmer	\$34.80
Program Manager	\$83.93
Programmer-Analyst II	\$35.55
Programmer-Analyst III	\$39.50
Programmer-Analyst IV	\$45.43
Project Manager	\$78.99
Senior Applications Engineer	\$59.24
Senior LAN Maintenance Tech	\$25.18
Senior Microcomputer Applications Developer	\$44.44
Senior Microcomputer Support Specialist	\$51.34
Senior Network Administrator	\$51.34
Senior Operator Sys/Software Analyst Programmer	\$39.00
Senior Software Engineer	\$51.34
Senior Systems Programmer	\$59.24
Software Engineer	\$51.34
Systems Analyst II	\$37.53
Systems Analyst III	\$41.48
Systems Development Manager I	\$46.41
Systems Development Manager II	\$55.29
Systems Development Manager III	\$71.09
Systems Development Manager IV	\$79.98
Systems Development Manager V	\$109.61
Systems Programmer	\$51.34
Tech Writer	\$28.64
Technical Typist	\$14.91
Wiring/Cable Technician	\$29.63

1. Commercial Job Title: AIS Security Analyst

Minimum/General Experience: A minimum of three (3) year experience in risk analysis and security audit methodologies, computer center operations, contingency planning, tele-communications, application and computer security, and preparation of accreditation and certification documentation.

Functional Responsibility: Under the direction of senior personnel, performs risk analysis and security audit services. Under the direction of senior personnel, develops analytical reports and other products, as required. Supports and maintains AIS security software, including modifying existing software code and writing new software code as necessary to ensure compliance with

AIS security regulations. Assist users in the use and understanding of the technical AIS security software.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training beyond high school may be substituted for up to six (6) months of the three (3) year minimum general experience required.

2. Commercial Job Title: AIS Security Project Manager

Minimum/General Experience: A minimum of five (5) years experience in risk analysis and security audit methodologies, computer center operations, contingency planning, tele-communications, application and computer security, and preparation of accreditation and certification documentation.

Functional Responsibility: Independently performs or leads project teams in performing risk analysis and security audit services. Independently develops or supervises the development of analytical reports and other products, as required. Supports and maintains AIS security software, including modifying existing software code and writing new software code as necessary to ensure compliance with AIS security regulations. Fields customer inquiries relevant to AIS security software and develops operating procedures concerning AIS security issues. Directs the activities of personnel engaged in developing AIS security software. Serves as the central point of contact between technical AIS security personnel and software developers developing AIS security software.

Minimum Education: Bachelors degree or equivalent.

Substitutions: An advanced degree may be substituted for up to one (1) year of the five (5) years minimum general experience required. Two (2) years related experience, in addition to the five (5) years minimum general experience required may be substituted for education (excluding high school).

3. Commercial Job Title: AIS Security Senior Analyst

Minimum/General Experience: A minimum of three (3) years experience in risk analysis and security audit methodologies, computer center operations, contingency planning, tele-communications, application and computer security, and preparation of accreditation and certification documentation.

Functional Responsibility: Independently performs or leads project teams in performing risk analysis and security audit services. Independently develops or supervises the development of analytical reports and other products, as required. Supports and maintains AIS security software, including modifying existing software code and writing new software code as necessary to ensure compliance with AIS security regulations. Fields customer inquiries relevant to AIS security software and develops operating procedures concerning AIS security issues.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Additional directly related technical education or training may be substituted for up to one (1) year of the three (3) years minimum general experience required. One (1) year related experience, in addition to the two (2) years minimum general experience required may be substituted for education (excluding high school).

4. Commercial Job Title: AIS Security Tech Assistant

Minimum/General Experience: A minimum of one (1) year experience in risk analysis and security audit methodologies, computer center operations, contingency planning, tele-communications, application and computer security, and preparation of accreditation and certification documentation.

Functional Responsibility: Under the direction of senior personnel, formulates reports and other products as required. Assists programmers and analysts in supporting and maintaining AIS security software, including modification of software code and writing new software code as necessary to ensure compliance with AIS security regulations. Assists users of technical AIS security software.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training beyond high school may be substituted for up to six (6) months of the one (1) year minimum general experience required.

5. Commercial Job Title: AIS Specialist

Minimum/General Experience: A minimum of two (2) years experience performing a variety of information systems tasks in the areas listed under Functional Responsibility.

Functional Responsibility: Performs high level systems analysis, evaluation, design, and integration of *very* complex applications to determine the adequacy of existing systems and/or define new application system architectures. Surveys new hardware, software, and telecommunications technologies to determine potential benefits/risks involved in engineering/reengineering the application system to take advantage of state-of-the-art technologies. Uses data and functional modeling techniques to define application system features and database structures required to meet system performance requirements. May perform relational database definition, design, development, implementation, and administration, using state-of-the-art database technologies and software tools. Develops/modifies logical and physical data models and database schema. Designs, develops, and maintains database loading procedures, back-up and restore facilities, reorganization procedures, and disaster recovery techniques.

Minimum Education: Technical degree in Computer Science or related discipline.

Substitutions: Additional directly related technical education or training may be substituted for up to one (1) year of the two (2) years minimum general experience required. One (1) year related experience, in addition to the two (2) years minimum general experience required, may

be substituted for education (excluding high school)

6. Commercial Job Title: Application Engineer

Minimum/General Experience: A minimum of three (3) years experience in providing software application support to customers.

Functional Responsibility: Provides technical support of commercial software, including installation, initial user instruction. Also assists users after installation with advanced use techniques and resolution of problems with software operation. Makes decisions and recommends solutions to problems within established guidelines.

Minimum Education: Bachelor degree or equivalent.

Substitutions: Additional directly related technical education or training may be substituted for up to one (1) year of the two (2) years minimum general experience required. Two (2) years related experience, in addition to the two (2) years minimum general experience required may be substituted for education (excluding high school).

7. Commercial Job Title: Computer Administrator

Minimum/General Experience: A minimum of two (2) years experience in operating computer systems. Must have thorough knowledge of the capabilities of applicable computer hardware configurations. Requires at least three (3) years supervising personnel operating computer systems, including one (1) year as shift supervisor or manager in a multi-shift environment.

Functional Responsibility: This individual is responsible for overall administration of computer systems, including hardware, software and communications equipment. Installs new software and patches and upgrades to existing software. Monitors and maintains records of system performance. Ensures that proper diagnostic and maintenance procedures are followed. Assists functional personnel in the use of the system. Recommends performance settings for system optimization.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the five (5) years minimum general experience required. This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

8. Commercial Job Title: Computer Aide

Minimum/General Experience: A minimum of one (1) year ADP experience in any phase of computer work.

Functional Responsibility: Performs routine duties on support operations under close supervision. Provides operations support, such as the operation of auxiliary equipment directly associated with the computer; and mounting/dismounting tapes, disks, or other electronic media. May assist in monitoring and controlling a computer by operating the center console or

on-line terminals, and other routine operational functions. Provides data entry support to include routine data preparation, input, verification, and distribution. Performs administrative, clerical, and operations support, which may include tape library functions. Works on routine CAD, CAD/CV, or GIS production operations assignments. Provides routine network and user support.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to three (3) months of the one (1) year minimum general experience required.

Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

9. Commercial Job Title: Data Entry Operator

Minimum/General Experience: A minimum of six (6) months data entry and verification experience via various input devices, such as keypunch, key-to-tape, key-to-disk, or other input devices.

Functional Responsibility: Performs data entry and verification of data, where applicable. Inputs data from numerous types of source documents requiring various formats. Work is routine and repetitive. Performs routine data preparation and distribution when incidental to data entry tasks.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to three (3) months of the six (6) months minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

10. Commercial Job Title: Database Analyst

Minimum/General Experience: A minimum of three (3) years experience in database design, configuration, and implementation.

Functional Responsibility: Analyzes organizational and computer database systems. Designs and implements computer database systems in both standalone and network configurations. Is knowledgeable in both commercially available off-the-shelf (COTS) and custom database software platforms. Develops technical documentation detailing the installation procedures.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Two (2) years related experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a computer related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

11. Commercial Job Title: Facilities Manager

Minimum/General Experience: A minimum of seven (7) years progressive ADP experience. Experience must include at least three (3) years in supervision and management of substantive ADP projects involving ADP equipment configuration and/or computer systems operation; and at least two (2) years in planning, organizing, directing, and controlling all functions of a computer systems facility. Must have thorough knowledge of the capabilities of applicable computer hardware configurations, computer facility environmental requirements, network considerations, and computer facility security requirements.

Functional Responsibility: Manages and controls substantial (e.g., multi-system, multi-shift, and/or multi-function) computer operations and support. Functions may consist of user support, computer/network operations, network maintenance, data entry, specialized workstations, production control, operating system software analysis and programming, and support functions. Plans, directs, controls, schedules, coordinates, and organizes facilities utilization and management projects. Projects may also include security, both physical and hardware/software; establishing charge back rates; monitoring hardware CPU usage; and recommending methodology for more efficient utilization. Evaluates alternatives for more efficient and effective accomplishment of work. Establishes procedures and develops documentation. Interfaces, through verbal and written communications, with technical and contract personnel and customer agency representatives. May be responsible for planning for the augmentation of existing systems, evaluation of and operation of automatic data processing equipment, data communication equipment, and data communications networks.

Minimum Education: Bachelors degree in Computer Science, Business Management, or related discipline.

Substitutions: Three (3) years facilities management experience, in addition to the seven (7) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the seven (7) years minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

12. Commercial Job Title: Graphics Specialist

Minimum/General Experience: A minimum of two (2) years experience in graphic design.

Functional Responsibility: Prepares formal technical drawings, graphics, and illustrations. Examples include: graphics for facility security profiles, ADP training aids and materials, presentation view-graphs and slides, flow charts, floor plans, and other related material.

Minimum Education: Technical degree or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the two (2) years minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

13. Commercial Job Title: Internetworking Specialist

Minimum/General Experience: A minimum of three (3) years experience in administering and managing integrated telecommunications systems and networks.

Functional Responsibility: Coordinates the design, installation, and maintenance of hardware and software systems. Monitors the operations of integrated telecommunications systems, particularly in heterogeneous networking environments. Ensures existing network/internetwork systems are operational and requirements are met. Keeps abreast of developments in open systems environment standards and technologies. Interacts with vendors, keeping up with new products. Supervises staff. Evaluates and maintains existing or proposed integrated telecommunications systems. Analyzes the business needs of the users and recommends integrated networking solutions.

Minimum Education: Bachelors degree or technical training equivalent.

Substitutions: Two (2) years related experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in computer related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

14. Commercial Job Title: IT Subject Matter Specialist

Minimum/General Experience: A minimum of five (5) years experience in the area of specialization.

Functional Responsibility: Provides technical knowledge and analysis of highly specialized applications and operational environments. Provides high-level functional and/or technical systems analysis, design, integration, documentation, and implementation advice on exceptionally complex problems that require extensive knowledge of the subject matter for effective implementation. Applies principles, methods, and knowledge of the functional area of expertise to specific task order requirements. Employs advanced business and administrative principles and methods to exceptionally difficult and narrowly defined technical problems to arrive at automated solutions.

Minimum Education: High school graduate or equivalent.

Substitutions: Three (3) years experience in the specific field of expertise, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school).

15. Commercial Job Title: Journeyman Analyst Programmer

Minimum/General Experience: A minimum of two (2) years experience in developing, modifying, and maintaining complex computer programs. Requires knowledge of machine-level languages and of one or more proprietary database application development languages. Also requires knowledge of non-standard programming techniques.

Functional Responsibility: Evaluates user requests for new or modified programs to determine feasibility, cost, and time requirements, and compatibility with existing systems and computer capabilities. Determines programming specifications. Provides assistance to lower-level programmers. May be the most senior programmer where the programming environment consists primarily of maintaining existing systems.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a computer related field may be substituted for up to one (1) year of the two (2) years minimum general experience required.

16. Commercial Job Title: Journeyman Computer Operator

Minimum/General Experience: A minimum of three (3) years in operating computer systems. Must have a broad knowledge of the capabilities of the hardware system.

Functional Responsibility: Monitors and controls a computer by operating the central console or on-line terminals. Responsible for continuous observation of the console panel, storage devices, printers, readers, punches, and the action of the console typewriter to monitor the system and determine the point of equipment or program failure. May supervise computer operations personnel in the operation of computer systems and peripheral equipment to process client data according to operating instructions. Makes determinations necessary to maintain control of all computer runs and schedules. Manipulates controls in accordance with standard procedures to rearrange sequence of job steps to continue operations when individual units of the system malfunction. In the event of a malfunction, confers with technical personnel (i.e., equipment /software vendor) and advises subordinate personnel of appropriate course of action. Additional duties may include writing, editing, and/or graphic presentation of technical information for both technical and non-technical personnel. Interprets technical documentation standards and prepares documentation according the standards.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the three (3) years minimum general experience required. This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

17. Commercial Job Title: Junior Analyst Programmer

Minimum/General Experience: A minimum of one (1) year experience in computer programming. Requires knowledge of machine-level languages and of one or more proprietary database application development languages.

Functional Responsibility: Plans, develops, tests, and documents computer programs, working from detailed source data provided by senior programmers or systems analysts. Applies standard programming procedures and a detailed knowledge of the application being

programmed. May prepare program documentation and materials for users. May provide assistance to lower-level programmers.

Minimum Education: Technical degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the one (1) year minimum general experience required, may be substituted for education (excluding high school).

18. Commercial Job Title: Junior Computer Operator

Minimum/General Experience: A minimum of one (1) year experience in operating computer systems and/or computer terminals. Must be familiar with all normal operating procedures.

Functional Responsibility: Works on routine computer operation assignments under close supervision. Assists in operating computer systems and peripheral equipment, conforming to site-specific operating procedures. Monitors and controls a computer by operating the central console or on-line terminal in accordance with established routines. Continuously observes the operation of the equipment, reporting any deviations from standard. Maintains records regarding output units and supply inventories.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to six (6) months of the one (1) year minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

19. Commercial Job Title: Junior Data Entry Clerk

Minimum/General Experience: A minimum of one (1) years data entry and verification experience via various input devices, such as keypunch, key-to-tape, key-to-disk, or other input devices.

Functional Responsibility: Performs data entry and verification of data, where applicable. Inputs data from numerous types of source documents requiring various formats. Work requires the application of experience and judgment in selecting procedures to be followed and in searching for, interpreting, selecting, or coding items to be input from a variety of source documents. Performs routine data preparation and distribution when incidental to data entry tasks.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the two (2) years minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

20. Commercial Job Title: L/S Analyst Programmer

Minimum/General Experience: A minimum of three (3) years experience in advanced

programming techniques. Requires knowledge of machine-level languages and of one or more proprietary database application development languages. Also requires detailed and comprehensive knowledge of the employer's applications and computer hardware environment.

Functional Responsibility: Works with other analysts and users to identify current operating procedures and clarify program objectives. Outlines steps required to develop programs, including diagrams and charts. Submits plans to user for approval. Develops programs that meet user requirements. Writes program documentation and user operations guidelines. Assists users to resolve operations problems and provides technical assistance to users and lower level programmers.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Two (2) years related experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a computer related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

21. Commercial Job Title: LAN Maintenance Tech

Minimum/General Experience: A minimum of one (1) year progressive specialized technical maintenance experience on ADP equipment. Experience with hardware and software components and system maintenance shall have included workstations, servers, or other components related to networked systems. Requires experience with fiber optic cable, workstation component assembly, configuration, network integration, testing system components, tracing and repairing outages, diagnostics, hardware repair, and software debugging. Experience must include diagnosing and troubleshooting related network components on an IEEE type system within the last two (2) years.

Functional Responsibility: Participates in all phases of LAN projects to provide maintenance and upgrading of networks and their related components, to include both LANs and WANs. Performs routine diagnostic testing and optimization of all elements of the network facilities, including power, software, communications machinery, lines, modems, and terminals. Repairs and/or replaces network hardware components. Performs component server and workstation connection, configuration, integration, and testing. Performs preventive maintenance for hardware and software, such as equipment cleaning and vacuuming, cable/connection inspection, software virus protection, and configuration integrity. Monitors and controls performance and status of network resources. Identifies and diagnoses problems and factors affecting network performance. Other duties may include the design and installation of cabling changes, maintenance of system files, operation of data communications equipment, and upgrading of system components.

Minimum Education: High school graduate or equivalent, supplemented by at least 80 classroom hours of technical instruction in network maintenance.

Substitutions: Two (2) years of network experience, in addition to the one (1) year minimum general experience required, may be substituted for education (excluding high school). Note:

This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

22. Commercial Job Title: LAN Manager

Minimum/General Experience: A minimum of five (5) years progressive ADP and/or network experience within the last five (5) years, including one (1) year specialized technical management experience on LAN systems. Network experience shall have included supporting the IEEE 802.3, 802.4, or 802.5 standards. Must have experience in optimizing networks for performance, configuring and connecting workstations, and diagnosing and troubleshooting related network components. Requires one (1) year experience within the past four (4) years managing and administering a LAN utilizing a current off-the-shelf Network Operating System (NOS).

Functional Responsibility: Performs managerial and technical administration of a LAN to include security, communications, software applications, electronic mail, printing services, outside communication links, UPS service, calendaring/scheduling services, license administration, file services, NOS service, backup services, and any other initial troubleshooting. Performs all phases of LAN projects to provide maintenance and upgrading of networks and their related components. Analyzes vendor products to recommend those which best meet user needs. Installs network software. Maintains LAN management records and assists users. Performs routine diagnostic testing and optimization of all elements of the network facilities (including power, software, communications machinery, lines, modems, and terminals). Repairs and/or replaces network hardware components. Performs component server and workstation connection, configuration, integration, and testing. Performs preventive maintenance for hardware and software, such as equipment cleaning and vacuuming, cable/connection inspection, software virus protection, and configuration integrity. Monitors and controls the performance, security, and status of network resources. Identifies and diagnoses problems and factors affecting network performance. Other duties may include designing and installing cabling changes, maintaining system files, operating data communications equipment, and upgrading system components.

Minimum Education: Bachelors degree or equivalent; or a high school graduate (or equivalent) with 120 classroom hours of technical training in LAN administration and maintenance.

Substitutions: Three (3) years of ADP or network experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school).

23. Commercial Job Title: LAN Technician - LI (TNI)

Minimum/General Experience: A minimum of two (2) year experience working with fiber cable. Requires a general understanding of all areas listed under Functional Responsibility.

Functional Responsibility: Performs fiber cable installation, termination, and testing for network systems. Uses appropriate standards, i.e., TIA/EIA 568A/568B, 569A, 570, 606, 607, NEC, FCC. Applies knowledge of blueprint reading, design layout, symbols, and abbreviations in completion of tasks. Follows common safety practices for hazardous environments, using

personal protective equipment, BCLS, first aid, and CPA as necessary.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training beyond high school may be substituted for up to six (6) months of the two (2) year minimum general experience required. This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

24. Commercial Job Title: Lead Computer Operator

Minimum/General Experience: A minimum of two (2) years in operating computer systems.

Must have a broad knowledge of the capabilities of the hardware system.

Functional Responsibility: Monitors and controls a computer by operating the central console or on-line terminals. Responsible for continuous observation of the console panel, storage devices, printers, readers, punches, and the action of the console typewriter to monitor the system and determine the point of equipment or program failure. May supervise computer operations personnel in the operation of computer systems and peripheral equipment to process client data according to operating instructions. Makes determinations necessary to maintain control of all computer runs and schedules. Manipulates controls in accordance with standard procedures to rearrange sequence of job steps to continue operations when individual units of the system malfunction. In the event of a malfunction, confers with technical personnel (i.e., equipment /software vendor) and advises subordinate personnel of appropriate course of action. Additional duties may include writing, editing, and/or graphic presentation of technical information for both technical and non-technical personnel. Interprets technical documentation standards and prepares documentation according the standards.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the three (3) years minimum general experience required.

25. Commercial Job Title: Lead Programmer Analyst/Senior Tech Consultant

Minimum/General Experience: A minimum of five (5) years experience performing a variety of information systems tasks in the areas listed under Functional Responsibility.

Functional Responsibility: Performs high level systems analysis, evaluation, design, and integration of very complex applications to determine the adequacy of existing systems and/or define new application system architectures. Surveys new hardware, software, and telecommunications technologies to determine potential benefits/risks involved in engineering/reengineering the application system to take advantage of state-of-the-art technologies. Uses data and functional modeling techniques to define application system features and database structures required to meet system performance requirements. May perform relational database definition, design, development, implementation, and administration, using state-of-the-art database technologies and software tools. Develops/modifies logical and physical data models and database schema. Designs, develops,

and maintains database loading procedures, back-up and restore facilities, reorganization procedures, and disaster recovery techniques.

Minimum Education: Bachelors degree in Computer Science or related discipline.

Substitutions: Additional directly related technical education or training may be substituted for up to one (1) year of the two (2) years minimum general experience required. One (1) year related experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school).

26. Commercial Job Title: Lead Senior Data Entry Clerk

Minimum/General Experience: A minimum of three (3) years experience in data entry and verification via various input devices, such as keypunch, key-to-tape, key-to-disk, or other input devices.

Functional Responsibility: Works independently to perform data entry, including verification, where applicable. Work requires the application of experience and judgment in selecting procedures to be followed and in searching for, interpreting, selecting, or coding items to be input from a variety of complex source documents. Designs, sets up, and implements special screen formats for specific input requirements. Inputs data from numerous types of source documents requiring various complex formats. Performs routine data preparation and distribution when incidental to data entry tasks.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to one (1) year of the three (3) years minimum general experience required. Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

27. Commercial Job Title: Lead System Analyst/Project Leader

Minimum/General Experience: A minimum of seven (7) years experience performing a variety of information systems tasks in the areas listed under Functional Responsibility.

Functional Responsibility: Performs as an in-house technical expert in a specialty field, which may be business, scientific, or technical in nature. Responsible for planning, developing, implementing, and maintaining a major initiative, as well as selecting and directing subordinate personnel for this purpose. Formulates systems scope and objectives, devises or modifies procedures to solve problems using information systems, prepares detailed specifications from which programs will be written, analyzes and revises existing systems logic difficulties, develops requirements, and prepares functional designs for systems analysis/programming projects. Utilizes latest available software language versions, as well as state-of-the-art tools and development techniques in the analysis, evaluation, design, development, and integration of very complex applications. Advanced methodologies used may include, but are not limited to, rapid prototype development techniques, object oriented modeling techniques, CASE tools, and product-specific tools and methodologies. May be

required to manage outsourcing subcontractors as well as in-house software development and systems operation team, and integrate results into a quality product or service. Facilitates and/or chairs customer, partner, and subcontractor meetings, as well as joint application development sessions.

Minimum Education: Bachelors degree or technical training equivalent.

Substitutions: Seven (7) years related experience, in addition to the seven (7) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to two (2) year of the seven (7) years minimum general experience required.

28. Commercial Job Title: Microcomputer Applications Developer

Minimum/General Experience: A minimum of one (1) year experience in microcomputer applications development. Requires extensive knowledge of database applications development tools, such as dbase, Paradox, or Foxbase.

Functional Responsibility: Designs and codes new applications operating on microcomputers, including applications running under the control of graphical user interfaces (GUIs). May use computer software tools to generate standardized code, debug programs, and test interactivity.

Minimum Education: High school graduate or equivalent, supplemented by at least one (1) year of training in state-of-the-art microcomputer applications development languages.

Substitutions: Additional directly related technical education or training may be substituted for up to three (3) months of the one (1) year minimum general experience required. Two (2) years related experience, in addition to the one (1) year minimum general experience required, may be substituted for education (excluding high school).

29. Commercial Job Title: Microcomputer Support Specialist

Minimum/General Experience: A minimum of one (1) year experience in installing, maintaining, and troubleshooting microcomputer hardware and software. Skilled in staffing a help desk or information center. Requires a comprehensive knowledge of one or more operating systems and environments.

Functional Responsibility: Responds to system users' requests for assistance, via phone and/or in person, by providing technical expertise and training. Installs and modifies microcomputer hardware and software. Makes diagnoses of hardware, software, and operator problems and takes remedial actions or recommends procedural changes. May install and configure peripheral equipment, such as monitors, keyboards, printers, and disk drives. May load and configure software, such as operating systems and environments, as well as applications, such as word processing, database, and spreadsheet programs.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training beyond high school may be

substituted for up to six (6) months of the one (1) year minimum general experience required. This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

30. Commercial Job Title: Multimedia Specialist

Minimum/General Experience: A minimum of six (6) years experience in complex, integrated multimedia systems design, engineering, and implementation.

Functional Responsibility: Performs a variety of tasks, which are broad in nature and are concerned with the design and implementation of integrated multimedia systems. Oversees the integration of the various components of a multimedia system, including hardware, software, communications and audio/visual components. Plans and performs systems engineering, research, design, development, and other assignments. May supervise an integrated team assigned to specific areas of a multimedia project. Is responsible for major projects of high complexity and importance.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the six (6) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in computer related field may be substituted for up to one (1) year of the six (6) years minimum general experience required. This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

31. Commercial Job Title: Network Analyst I

Minimum/General Experience: A minimum of one (1) year technical experience in installing and maintaining Local Area Networks (LANs).

Functional Responsibility: Provides technical support in the installation and maintenance of a simple LAN consisting of 25 or fewer nodes, or a section of a larger network. Assists in the evaluation of hardware and software, including peripheral, output, and telecommunications equipment. Installs network hardware and software, including network operating systems. Monitors data communications to ensure that network is available to all users. Troubleshoots and resolves routine problems.

Minimum Education: Associates degree in related discipline, or certification as a Network Engineer.

Substitutions: Three (3) years of network experience, in addition to the one (1) year minimum general experience required, may be substituted for education (excluding high school).

32. Commercial Job Title: Network Analyst II

Minimum/General Experience: A minimum of three (3) years technical experience in designing, installing, maintaining, and coordinating the use of Local Area Networks (LANs).

Functional Responsibility: Evaluates hardware and software, including peripheral, output, and telecommunications equipment on moderately complex networks of 25 to 100 nodes. Enforces security procedures, installs network software, and manages network performance. Troubleshoots and resolves complex problems. Implements and coordinates network policies, procedures, and standards. Trains users on LAN operations and capabilities.

Minimum Education: Bachelors degree in related discipline, or certification as a Network Engineer.

Substitutions: Three (3) years of network experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school).

33. Commercial Job Title: Network Analyst III

Minimum/General Experience: A minimum of six (6) years experience as a Network Engineer, including extensive expertise across hardware and systems supplied by multiple vendors.

Functional Responsibility: Designs, installs, and maintains complex networks that typically link numerous computing platforms, operating systems, and network topologies across widely dispersed geographic areas. Evaluates hardware and software suitable for large complex networks. Designs, tests, and implements interface programs. Develops security procedures. Manages network performance. Troubleshoots and resolves complex problems to ensure no disruption of missioncritical applications. Designs and maintains fault-tolerant systems and manages system backups. Generally has supervisory responsibility for subordinate network analysts.

Minimum Education: Bachelors degree in related discipline, or certification as a Network Engineer.

Substitutions: Three (3) years of network experience, in addition to the six (6) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in related field may be substituted for up to one (1) year of the six (6) years minimum general experience required.

34. Commercial Job Title: Operating Systems Software Analyst Programmer

Minimum/General Experience: A minimum of three (3) years experience in systems programming and/or analysis. Requires at least one (1) year working independently on moderately complex operating systems analysis/programming projects.

Functional Responsibility: Assists in the installation and testing of moderately complex system software programs. Develops instructions and procedures for use of moderately complex operating system software. Modifies and maintains system software by developing new or modified software code, or via releases and utilities from manufacturers. Is responsible for maintenance of system subroutine applications dealing with the overall system operating parameters. These include file maintenance routines, network sniffers, etc. Prepares and edits technical documentation, incorporating information provided by user, specialist, analyst,

programmer, and operations personnel. Interprets technical documentation standards and prepares functional documentation accordingly. May write, edit, or develop graphic presentations of technical information for both technical and non-technical personnel.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Additional related technical education or training may be substituted for up to six (6) months of the three (3) years minimum general experience required.

35. Commercial Job Title: Program Manager

Minimum/General Experience: A minimum of six (6) years experience in the development and management of programs consisting of multiple projects.

Functional Responsibility: Responsible for project identification, design, development, and delivery. Program areas typically represent more than three functional areas that may include engineering systems analysis, quality control, administration, etc. Responsible for marketing new technology and follow-on business acquisitions. Responsible for the effective management of funds and personnel and is accountable for the quality and timely delivery of all contractual terms. Operates within client guidance, contractual limitations, and company business and policy directives. Serves as focal point of contact with client regarding program activities. Ensures that all required resources, including manpower, production standards, computer time, and facilities are available for program implementation. Maintains the development and execution of business opportunities. Confers with project manager to provide technical advice and to assist with problem resolution. Directs the performance of a variety of related projects, which may be organized by technology, program, or client. Oversees the technology development and/or application marketing, and resource allocation within program client base.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years of program management experience, in addition to the six (6) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the six (6) years minimum general experience required.

36. Commercial Job Title: Programmer Analyst II

Minimum/General Experience: A minimum of one (1) years programming experience.

Functional Responsibility: Performs systems analysis, design, integration, programming, documentation, and implementation of applications that do not require a thorough knowledge of higher mathematics for effective implementation. Participates in all phases of software development with emphasis on the integration, programming, testing, documentation, and acceptance phases. Applies standard data manipulation principles and methods to technical problems to arrive at automated solutions.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Additional directly related technical education or training may be substituted for up to one (1) year of the one (1) years minimum general experience required. One (1) year related experience, in addition to the one (1) years minimum general experience required, may be substituted for education (excluding high school).

37. Commercial Job Title: Programmer Analyst III

Minimum/General Experience: A minimum of four (4) years programming experience.

Functional Responsibility: Performs systems analysis, design, integration, programming, documentation, and implementation of applications. Participates in all phases of software development with emphasis on the analysis, integration, programming, testing, documentation, and acceptance phases. Applies data manipulation principles and methods to technical problems to arrive at automated solutions. May have task leader responsibility for ensuring the quality and services delivered on particular tasks.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the four (4) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the four (4) years minimum general experience required.

38. Commercial Job Title: Programmer Analyst IV

Minimum/General Experience: A minimum of six (6) years programming experience.

Functional Responsibility: Performs high level systems analysis, evaluation, design, integration, programming, documentation, and implementation of very complex applications, requiring a thorough knowledge of systems concepts for effective implementation. Directs and participates in all phases of software development with emphasis on the planning, analysis, evaluation, integration, testing, and acceptance phases. Applies data manipulation principles and methods to technical problems to arrive at automated solutions. May have task leader responsibility for ensuring the quality and services delivered on particular tasks.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the six (6) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the six (6) years minimum general experience required.

39. Commercial Job Title: Project Manager

Minimum/General Experience: A minimum of three (3) years experience in program or project management. Requires working technical knowledge of hardware and software environments. Also requires excellent written and oral communication skills, as well as excellent matrix management skills.

Functional Responsibility: Position includes oversight and responsibility for major functional areas of Information Technology management, including computer hardware infrastructure integrity, software development and support, networking and communications, computer system security. Provides a single point of contact for all account activities on one contract or project. Develops work breakdown structures. Organizes project team and coordinates resource commitments. Manages the contracts/projects to attain goal of 100% customer satisfaction level. Identifies areas of opportunity to expand client base through technology refresh and/or new contracts. Conducts regular project reviews and keeps management informed of real and/or perceived problems. Maintains regular contact with other departments to identify potential problems/solutions for assigned projects. Responds to RFPs/proposals/SOWs, as required. Maintains good communications with vendors and suppliers to keep abreast of technology.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years project management experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

40. **Commercial Job Title:** Senior Applications Engineer

Minimum/General Experience: A minimum of five (5) years technical experience in developing, maintaining, and troubleshooting computer software products and applications.

Functional Responsibility: Provides software support to functional and technical personnel analysis in problem situations. This support may be instructional in nature, or entail the development of additional software code. Is considered the resident "expert" on a particular software application. Also provides testing and ensures security integrity on any changes or upgrades to software. Provides technical assistance to lower level programmers, and provides instruction to programmers on the functional aspects of the software application.

Minimum Education: Bachelors degree or technical training equivalent.

Substitutions: An advanced degree may be substituted for up to one (1) year of the five (5) years minimum general experience required. Three (3) years related experience, in addition to the five (5) years minimum general experience required may be substituted for education (excluding high school).

41. **Commercial Job Title:** Senior LAN Maintenance Technician

Minimum/General Experience: A minimum of two (2) years progressive technical maintenance experience on ADP equipment. Experience with hardware and software components and system maintenance shall have included LAN workstations, servers, or other components related to LAN systems. Experience may include cable (fiber, coax, twisted-pair), workstation components (interface cards, floppy and hard disks, drivers) installation, configuration (multiple access units (MAUs), attachment unit interfaces (AUIs), hubs, gateways, routers, bridges), network software (operating systems, office automation applications), testing system

components, tracing and repairing outages, diagnostics, and minor hardware repair. Experience must include diagnosing and troubleshooting related network components on a minimum of three (3) IEEE type LANs within the last five (5) years.

Functional Responsibility: Works independently to install and provide maintenance of LAN and LAN-related components. Performs diagnostic testing and system troubleshooting of LAN equipment. Repairs and replaces LAN components and maintains hardware performance, as required. Performs server and workstation connection, configuration, integration, and testing. Schedules and performs preventive maintenance on all hardware systems as outlined in OEM specifications. Maintains log of all repairs and replacements required. Upgrades system components, as required.

Minimum Education: High school graduate or equivalent, supplemented by at least 80 classroom hours of technical instruction in LAN administration/maintenance.

Substitutions: Two (2) years of network experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school).

Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

42. Commercial Job Title: Senior Microcomputer Applications Developer

Minimum/General Experience: A minimum of four (4) years experience in microcomputer applications development. Requires extensive knowledge of C++ or similar languages and objectoriented programming techniques. Also requires extensive knowledge of application development tools, such as dbase, Paradox, or Foxbase.

Functional Responsibility: Designs and develops complex microcomputer applications, which are typically client-server applications operating across computing networks and under the control of graphical user interfaces (GUIs). Provides assistance to lower level developers.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Advanced training in microcomputer development applications, languages, and environments may be substituted for up to one (1) year of the four (4) years minimum general experience required. Three (3) years related experience, in addition to the four (4) years minimum general experience required, may be substituted for education (excluding high school).

43. Commercial Job Title: Senior Microcomputer Support Specialist

Minimum/General Experience: A minimum of three (3) years specialized experienced in microcomputer applications, including specific experience in the disciplines listed under Functional Responsibility.

Functional Responsibility: Evaluates, analyzes, plans, and implements the testing and installation of new or enhanced hardware and software for microcomputers. Evaluates client training requirements in the use of hardware, software, and network products. Develops and

provides training applicable to those requirements. Configures software interfaces for microcomputers to be used in conjunction with other computer hardware and various systems, such as networks, CAD, and digitizing devices. May be required to analyze requirements and implement solutions for facility management applications in a specified media. Identifies problems and resolves minor hardware/software/network malfunctions. Provides minor hardware maintenance, such as board replacement, cable switching, communications assistance, hardware replacement, and CRT and printer installation. Performs preventive maintenance for hardware and software, such as equipment cleaning and vacuuming, cable/connection inspection, software virus protection, and configuration integrity.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Directly related technical education or training beyond high school may be substituted for up to one (1) year of the three (3) year minimum general experience required.

44. Commercial Job Title: Senior Network Administrator

Minimum/General Experience: A minimum of eight (8) years experience as a Network Engineer, including extensive expertise across hardware and systems supplied by multiple vendors.

Functional Responsibility: Designs, installs, and maintains complex networks that typically link numerous computing platforms, operating systems, and network topologies across widely dispersed geographic areas. Evaluates hardware and software suitable for large complex networks. Designs, tests, and implements interface programs. Develops security procedures. Manages network performance. Troubleshoots and resolves complex problems to ensure no disruption of missioncritical applications. Designs and maintains fault-tolerant systems and manages system backups. Generally has supervisory responsibility for subordinate network analysts.

Minimum Education: Bachelors degree in related discipline, or certification as a Network Engineer.

Substitutions: Three (3) years of network experience, in addition to the eight (8) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in related field may be substituted for up to one (1) year of the four (4) years minimum general experience required.

45. Commercial Job Title: Senior Operator Systems/Software Analyst Programmer

Minimum/General Experience: A minimum of five (5) years experience in operating systems programming and/or analysis. Requires at least two (2) years working independently on highly complex operating systems analysis/programming projects.

Functional Responsibility: Directs the installation and testing of highly complex system software programs, including mathematical and scientific applications. Develops instructions and procedures for use of highly complex operating system software. Modifies and maintains system software by developing new or modified software code, including code containing

complex embedded algorithms and analytical features, or via releases and utilities from manufacturers. Directs the maintenance and modification of system subroutine applications dealing with the overall system operating parameters. Is also responsible for the overall system performance, including the hardware infrastructure and communication infrastructure. These include file maintenance routines, network sniffers, etc. Prepares and edits technical documentation, incorporating information provided by user, specialist, analyst, programmer, and operations personnel. Interprets technical documentation standards and prepares functional documentation accordingly. Writes, edits, and develops graphic presentations of technical information for both technical and non-technical personnel. Delivers management briefings. Directs the activities of other personnel assigned to project.

Minimum Education: Bachelor degree or equivalent.

Substitutions: Additional related technical education or training may be substituted for up to one (1) year of the five (5) years minimum general experience required.

46. Commercial Job Title: Senior Software Engineer

Minimum/General Experience: A minimum of five (5) years experience designing, developing, implementing, and documenting software solutions.

Functional Responsibility: Engineers software solutions based upon client requirements. Generally, supervises a staff of software engineers, managing projects that make use of commercially available or custom Computer Aided Software Engineering (CASE) tools. Develops technical documentation detailing the project design parameters.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the five (5) years minimum general experience required.

47. Commercial Job Title: Senior Systems Programmer

Minimum/General Experience: A minimum of five (5) years experience in systems programming on multiple platforms and in various operating environments.

Functional Responsibility: Interprets, implements, and maintains complex operating systems and subsystems from specifications prepared by vendors and engineers. May fine-tune applications to maximize throughput on various computing platforms and equipment configurations. Responsible for integrating equipment and systems from multiple vendors into the overall organizational configuration to maximize data communications and resource sharing.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for one (1) of the five (5) years minimum

general experience required.

48. Commercial Job Title: Software Engineer

Minimum/General Experience: A minimum of three (3) years designing, developing, implementing, and documenting software solutions.

Functional Responsibility: Engineers software solutions based upon client requirements, using commercially available or custom Computer Aided Software Engineering (CASE) tools, as required. Develops technical documentation detailing the project design parameters. Generally reports to a senior software engineer.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

49. Commercial Job Title: Systems Analyst II

Minimum/General Experience: A minimum of three (3) years technical experience in complex management information and business systems. Requires expertise in specific types of applications and hardware systems. Requires detailed and comprehensive knowledge of the employer's operations, business systems, and computer platforms.

Functional Responsibility: Serves as leader in the design, development, implementation, and maintenance of large, complex computer systems. Coordinates and instructs programmers and systems analysts assigned to the project and serves as a liaison between functional and technical personnel in the layout, design and implementation of application software. Prepares feasibility studies of potential software systems and hardware configurations. Assists in the development of complex functional and technical software specifications and time and cost estimates for completing projects. Leads post-implementation analysis.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the three (4) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the three (3) years minimum general experience required.

50. Commercial Job Title: Systems Analyst III

Minimum/General Experience: A minimum of five (5) years experience in systems analysis and documentation development.

Functional Responsibility: Serves as Project Leader in the design, development, implementation, and maintenance of large, complex computer systems, including reviews existing computer capabilities, work-flows, and limitations to determine if requested capability

or modification is possible. Delegates work assignments to programmers and systems analysts assigned to the project and serves as primary point of contact liaison between functional and technical personnel in the layout, design and implementation of application software. Prepares feasibility studies of potential software systems and hardware configurations, and briefs to management personnel. Directs the development of complex functional and technical software specifications and time and cost estimates for completing projects. Leads post-implementation analysis, and directs the activities of personnel engaged in project implementation.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the five (5) years minimum general experience required.

51. Commercial Job Title: Systems Development Manager I

Minimum/General Experience: A minimum of two (2) years experience in a highly unique discipline or new state-of-the-art technology.

Functional Responsibility: Works under the supervision of senior personnel as a technical expert and provides assistance in complex, specialty information technology fields that could involve leading edge or emerging technologies. Researches and provides input on software development issues that require in-depth state-of-the-art knowledge. Assists in software development, including writing new code and modifying existing code. Primarily develops code on single platform. Develops bridge applications. Performs software conversions from platform to platform. Provides input to project leaders on project status, software development issues, software functionality, etc.

Minimum Education: High school graduate or equivalent.

Substitutions: Three (3) years related experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the two (2) years minimum general experience required.

52. Commercial Job Title: Systems Development Manager II

Minimum/General Experience: A minimum of two (2) years experience in a highly unique discipline or new state-of-the-art technology.

Functional Responsibility: Works independently as a technical expert and provides assistance in complex, specialty information technology fields that could involve leading edge or emerging technologies. Researches and provides input on software development issues that require in-depth state-of-the-art knowledge. Provides software development, including writing new code and modifying existing code. May provide input to changing system parameters to allow for software functionality across changed or converted system platforms, but primarily develops code on single platform. Performs software conversions from platform to platform. Provides

input to project leaders on project status, software development issues, software functionality, etc. Participates on various project teams, primarily software development and testing.

Minimum Education: Technical degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the two (2) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for up to one (1) year of the two (2) years minimum general experience required.

53. Commercial Job Title: Systems Development Manager III

Minimum/General Experience: A minimum of three (3) years experience in a highly unique discipline or new state-of-the-art technology.

Functional Responsibility: Participates as a member of a team as a technical expert and provides unique assistance in complex, specialty information technology fields that could involve leading edge or emerging technologies. Researches and provides input on software and system related issues that require in-depth state-of-the-art knowledge. Provides software development, including writing new code and modifying existing code. May also include changing system parameters to allow for software functionality across changed or converted system platforms. Performs software conversions from platform to platform. Provides input to management on project status, software development issues, software functionality, etc. Participates on various project teams, primarily software development and testing.

Minimum Education: Technical degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the three (3) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for one (1) of the three (3) years minimum general experience required.

54. Commercial Job Title: Systems Development Manager IV

Minimum/General Experience: A minimum of five (5) years experience in a highly unique discipline or new state-of-the-art technology.

Functional Responsibility: Participates as a member of a cross functional team as a technical expert and provides unique assistance in complex, specialty information technology fields that could involve leading edge or emerging technologies. Researches and provide recommendations on software and system related issues that require in-depth state-of-the-art knowledge. Provides systems integration, software development. Performs software conversions from platform to platform. Develops technical and functional specifications. Provides input to management on project status, software development issues, software functionality, etc.

Serves on projects that span several disciplines and geographic locations. Participates on various project teams, including hardware platform, software development, bridge application development, communications infrastructure. Serves as information contact for technical and functional issues. Helps develop, distribute and maintain operating procedures, ensuring that

they are technically in consonance with agency regulations and government statutes. Directs the activities of subordinate employees at single geographic locations.

Minimum Education: Technical degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for one (1) of the five (5) years minimum general experience required.

55. Commercial Job Title: Systems Development Manager V

Minimum/General Experience: Knowledge as required in a highly unique or new state-of-the-art technical or scientific field. This skill is reserved for those situations in which the expertise of the employee is rare or very new and specific to the specialty required by the task. For that reason, no mandatory or suggested minimum years of experience is required. The exact match of the employee's specific technical or functional experience to the task requirements is far more important than the duration of that experience.

Functional Responsibility: Performs as the project lead technical expert and provides unique assistance in complex, speciality information technology fields that could involve leading edge of emerging technologies. Provides direction and leadership in systems integration, software development, software conversion from platform to platform, development of technical and functional specifications. Provides project management and prepares and presents briefings on project status, software development issues, software functionality, etc.

Serves as leader on projects that span several disciplines as well as geographic locations. Directs the activities of various project teams, including hardware platform, software development, bridge application development, communications infrastructure. Serves as primary agency point of contact for technical and functional issues. Develops, distributes and maintains operating procedures, ensuring that they are issued in accordance with agency regulations and government statutes. Appears before technical and governing bodies as an expert on the particular system. Directs the activities of subordinate employees at multiple geographic locations.

Minimum Education: High school graduate or equivalent, supplemented by related technical training in a college or technical school.

Substitutions: Because of the high level of expertise and education required for this position, no substitutions are allowed.

56. Commercial Job Title: Systems Programmer

Minimum/General Experience: A minimum of five (5) years experience in systems software engineering.

Functional Responsibility: Coordinates installation of computer operating system software and tunes system for optimum throughput and resource availability. Tests, integrates, maintains, and modifies job control and similar programs. Interprets and implements systems and subsystems

from specifications prepared by senior systems programmers. Analyzes performance indicators, such as response time and number of transactions to ensure efficient use of resources and attainment of operating objectives.

Minimum Education: Bachelors degree or equivalent.

Substitutions: Three (3) years related experience, in addition to the five (5) years minimum general experience required, may be substituted for education (excluding high school). An advanced degree in a related field may be substituted for one (1) of the five (5) years minimum general experience required.

57. Commercial Job Title: Technical Writer

Minimum/General Experience: A minimum of two (2) year experience in writing and editing technical documents.

Functional Responsibility: Assists in collecting and organizing information required for preparation of technical documentation. Edits technical documents, reports, and deliverables for order, clarity, conciseness, style, and terminology.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to six (6) months of the two (2) year minimum general experience required Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.

58. Commercial Job Title: Technical Typist

Minimum/General Experience: A minimum of two (2) years ADP experience in any phase of computer work.

Functional Responsibility: Performs routine duties on support operations under close supervision. Provides operations support, such as the operation of auxiliary equipment directly associated with the computer; and mounting/dismounting tapes, disks, or other electronic media. May assist in monitoring and controlling a computer by operating the center console or on-line terminals, and other routine operational functions. Provides data entry support to include routine data preparation, input, verification, and distribution. Performs administrative, clerical, and operations support, which may include tape library functions. Works on routine CAD, CAD/CV, or GIS production operations assignments. Provides routine network and user support.

Minimum Education: High school graduate or equivalent.

Substitutions: Directly related technical education or training may be substituted for up to three (3) months of the two (2) years minimum general experience required.

Note: This labor category must be incidental to and used solely to support hardware, software

and/or professional services, and cannot be purchased separately.

59. Commercial Job Title: Wiring/Cabling Technician

Minimum/General Experience: A minimum of one (1) year general experience in wiring and cable installation and testing.

Functional Responsibility: Installs and tests cabling for voice, data, and video applications, including shielded and unshielded twisted pair, coaxial, fiber optic, and other specialized media. Installs and tests wall jackets, patch panels, distribution frames, punch-down blocks, connectors, jacks/plugs, etc., associated with the overall cable plant. Maintains and troubleshoots wiring and cable plant for voice, data, and video applications. Interacts with building engineers and architect designers during the installation process. Is familiar with both national and local wiring codes.

Minimum Education: High school diploma or equivalent.

Substitutions: Directly related technical education or training beyond high school may be substituted for up to six (6) months of the one (1) year minimum general experience required.

Note: This labor category must be incidental to and used solely to support hardware, software and/or professional services, and cannot be purchased separately.