

## GENERAL SERVICES ADMINISTRATION

### Federal Supply Service Authorized Federal Supply Schedule Price List

**Schedule Number/Title:** MAS- Multiple Award Schedule

**Schedule Items:** SIN 54151S Information Technology (IT) Professional Services  
SIN 518210C Cloud and Cloud-Related IT Professional Services  
SIN 511210 Software License

**Business Name:** Reality Technology, Inc.  
**Address:** 2444 Washington Street  
Suite 215  
Denver, Colorado 80205

**Phone:** 303-757-1107  
**Fax:** 303-757-1108  
**Website:** www.reality-technology.com  
**Email:** ivan.sr@reality-technology.com  
**Contract Administrator:** Ivan Drinks Sr.

**Company Description:** Reality Technology specializes in business application support

**Size of Business:** Small Disadvantaged Business

For ordering information (products, prices, terms and conditions, etc.), see [www.reality-technology.com](http://www.reality-technology.com)

**FSC Group:** 70  
**FSC Class(es) / Product code(s) / Other Codes (CAGE, NAICS, etc):**  
CAGE: 3CDC7  
NAICS: 541511, 541512, 541513, 541519  
FSC Class(es)  
7021 ADP Central Processing Unit (CPU, Computer), Digital  
7030 ADP Software  
7042 Mini and Micro Computer Control Devices  
7435 Office Information System Equipment

**Contract Number:** GS35F0147T  
Mod: Pending

**Contract Period:** November 30, 2006 to November 29, 2026

**DUNS #:** 076659684



# Customer Information

1a. Table of awarded special item number(s) (SINs) with appropriate cross-reference to page number(s): See Awarded SINs on page 4

1b. Lowest priced model for each SIN:

<u>SIN</u>	<u>Net GSA Schedule Price</u>
54151S	See Labor Rates on Appendix B
518210C	See Price List Below
511210	See Price List Below

1c. Hourly rates: See Labor Rates Category Descriptions at Appendix A; Labor Rates at Appendix B

2. Maximum order: \$500,000.00

3. Minimum order: \$100.00

4. Geographic coverage (delivery area): Domestic and overseas delivery

5. Point(s) of production (city, county, and state or foreign country): Not Applicable

6. Discount from list prices or statement of net price: Prices shown are NET prices; Basic Discounts have been deducted

7. Quantity discounts: 5% discount off GSA pricelist on orders over \$100,000

8. Prompt payment terms: 2% - 10 Days from receipt of invoice or date of acceptance, whichever is later

9a. Notification that Government purchase cards are accepted at or below the micropurchase threshold: Government purchase cards accepted at or below the micropurchase level

9b. Notification that Government purchase cards are accepted or not accepted above the micropurchase threshold: Government purchase cards accepted above the micropurchase level.

10. Foreign items: Not Applicable

11a. Time of delivery: As agreed upon between Reality Technology and ordering activity

11b. Expedited delivery: Overnight or 2-day delivery available

11c. Overnight and 2-day delivery: Government purchase card only. Contact Reality Technology at 303-757-1107 or [sales@reality-technology.com](mailto:sales@reality-technology.com) . Travel reimbursable by ordering agency governed by Pub L. 99-234 and FAR Part 31 or priced as a fixed price item.

11d. Urgent requirements: Contact Reality Technology at 303-757-1107 or [sales@reality-technology.com](mailto:sales@reality-technology.com) for urgent delivery. Reality Technology will respond to inquiry within 3 work days after receipt (Telephonic replies will confirmed by Reality Technology in writing). Travel reimbursable by ordering agency governed by Pub L. 99-234 and FAR Part 31 or priced as a fixed price item.

12. F.O.B. point(s): Destination

13a. Ordering address(es): Reality Technology, Inc.  
2444 Washington Street  
Suite 215  
Denver, Colorado 80205

13b. Ordering procedures: Ordering activities shall use the ordering procedures of Federal Acquisition Regulation (FAR) 8.405 when placing an order or establishing a BPA for supplies or services. These procedures apply:

- a. FAR 8.405-1 Ordering procedures for supplies and services not requiring a statement of work.
- b. FAR 8.405-2 Ordering procedures for supplies and services requiring a statement of work.

The ordering procedures, information on Blanket Purchase Agreement (BPA) and a sample BPA can also be found at the GSA/FSS Schedule Homepage ([fss.gsa.gov/schedules](http://fss.gsa.gov/schedules)).

14. Payment address(es): Reality Technology, Inc.  
2444 Washington Street  
Suite 215  
Denver, Colorado 80205

15. Warranty provision: Reality Technology warrants that the Services will be performed in a professional and workmanlike manner in accordance with recognized industry standards. To the extent Services provided by Reality Technology are advisory, no specific result is assured or guaranteed. Reality Technology warrants its Services for six months. If any issue arises related to Service provided within six months, Reality Technology will perform corrective action at no charge. If an issue should arise, Reality Technology must be notified before the expiry of the six month warranty period.

16. Export packing charges: Not Applicable

17. Terms & conditions of Government purchase card acceptance: Not Applicable

18. Terms & conditions of rental, maintenance and repair: Not Applicable

19. Terms & conditions of installation: Not Applicable

20. Terms & conditions of repair parts indicating date of parts price lists and any discounts from list prices (if applicable): Not Applicable

20a. Terms & conditions of other services: Not Applicable

21. List of service and distribution points: Not Applicable

22. List of participating dealers: Not Applicable

23. Preventive maintenance: Not Applicable

24a. Special attributes (e.g., recycled content, energy efficiency, and/or reduced pollutants): Not Applicable

24b. If applicable, indicate that Section 508 compliance information is available on Electronic and Information Technology (EIT) supplies and services and show where full details can be found: Voluntary Product Accessibility Template (VPAT) can be found at [www.reality-technology.com/vpat](http://www.reality-technology.com/vpat)

25. Data Universal Number System (DUNS) number: 076659684

26. Notification regarding registration in System for Award Management (SAM) database: Reality Technology CAGE: 3CDC7

27. Net billing statement: Net 30 days

28. Purchasing of incidental, non-schedule items: For administrative convenience, an ordering activity contracting officer may add items not on the Federal Supply Multiple Award Schedule (MAS)—referred to as open market items—to a Federal Supply Schedule blanket purchase agreement (BPA) or individual task or delivery order, **only if-**

(1) All applicable acquisition regulations pertaining to the purchase of the items not on the Federal Supply Schedule have been followed (e.g. publicizing (Part 5), competition requirement (Part 6), acquisition of commercial items (Part 12), contracting methods (Part 13, 14, and 15), and small business programs (Part 19));

(2) The ordering activity contracting officer has determined the price for the items not on the Federal Supply Schedule is fair and reasonable;

(3) The items are clearly labeled on the order as items not on the Federal Supply Schedule; and

(4) All clauses applicable to items not on the Federal Supply Schedule are included in the order.



# GS35F0147T APPENDICE

# APPENDIX A

## GS35F0147T Labor Category Description

### Labor Category

### APPENDIX A

#### Applications Programmer

Category Description: Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Designs, codes, tests, debugs, and documents.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Applications Systems Analyst/ Programmer – Intermediate

Category Description: Under general supervision, formulates and defines system scope and objectives through research and fact-finding to develop or modify moderately complex information systems. Prepares detailed specifications from which programs will be written. Designs, codes, tests, debugs, documents, and maintains those programs. Competent to work on most phases of applications systems analysis and programming activities, but requires instruction and guidance in other phases.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Applications Systems Analyst/ Programmer – Senior

Category Description: Under general direction, formulates and defines system scope and objectives. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Prepares detailed specifications from which programs will be written. Designs, codes, tests, debugs, and documents those programs. Competent to work at the highest technical level of all phases of applications systems analysis and programming activities. May be responsible for completion of a phase of a project. Regularly provides guidance and training to less-experienced analyst/programmers.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Business Process Consultant

Labor Category

APPENDIX A

Category Description: Responsible for most complex systems process analysis, design, and simulation. Requires highest-level understanding of organization's business systems and industry requirements. Focus is on process analysis and re-engineering, with an understanding of technical problems and solutions as they relate to the current and future business environment. Creates process change by integrating new processes with existing ones and communicating these changes to impacted Business Systems teams. Recommends and facilitates quality improvement efforts. May lead re-engineering team and act

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Business Subject Matter Specialist

Category Description: Provides technical knowledge and analysis of highly specialized applications and operational environments, high-level functional systems analysis, design, integration, documentation and implementation advice on exceptionally complex problems that need extensive knowledge of the subject matter for effective implementation. Participates as needed in all phases of software development with emphasis on the planning, analysis, testing, integration, documentation, and presentation phases.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Business Systems Analyst - Intermediate

Category Description: Under general supervision, formulates and defines systems scope and objectives through research and fact-finding combined with an understanding of applicable business systems and industry requirements. With this knowledge, develops or modifies moderately complex information systems. Includes analysis of business and user needs, documenting requirements, and revising existing system logic difficulties as necessary. Guides and advises less-experienced Business Systems Analysts. Competent to work in some phases of systems analysis and considers the business implications of the application of technology to the current business environment.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Business Systems Analyst - Senior

**Category Description:** Under general direction, formulates and defines systems scope and objectives based on both user needs and a good understanding of applicable business systems and industry requirements. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Includes analysis of business and user needs, documentation of requirements, and translation into proper system requirement specifications. Guides and advises less-experienced Business Systems Analysts. Competent to work at the highest technical level of most phases of systems analysis while considering the business implications of the application of technology to the current and future business environment.

**Minimum Experience:** 3 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Business Systems Specialist

**Category Description:** Top-level technical contributor with expertise in particular business processes responsible for formulating systems scope and objectives relative to the organization's business plan and industry requirements. Acts independently or as a member of a project team responsible for providing technical guidance concerning the business implications of the application of various systems. Provides technical consulting on complex projects. Devises and/or modifies procedures to solve the most complex technical problems related to computer equipment capacity and limitations, operating time, and form of desired results. Creates detailed specifications from which programs will be written. May have quality assurance responsibilities.

**Minimum Experience:** 5 years experience

**Education Requirement:** Master's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Chief Information Security Officer

**Category Description:** Ensures that all information systems are functional and secure.

**Minimum Experience:** 5 years experience

**Education Requirement:** Master's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Client/Server Database Manager

**Category Description:** Projects long-range requirements for client/server database administration in conjunction with other managers in the information systems function as well as business function managers. Prepares activity and progress reports regarding the client/server data base management section.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Client/Server Network Architect**

**Category Description:** Top-level technical expert responsible for design and development of a client/server environment. Develops strategy of client/server system and the design infrastructure necessary to support that strategy. Advises on selection of technological purchases with regards to processing, data storage, data access, and applications development. Sets standards for the client/server relational database structure for the organization (SQL, ORACLE, SYBASE, etc.). Advises of feasibility of potential future projects to management.

**Minimum Experience:** 3 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Client/Server Support Analyst**

**Category Description:** Under general supervision, assists with personal computer operating systems software and communication system software. Designs, tests, and maintains personal computer systems. Responsible for analyzing and solving personal computer-related problems. Responsible for security, integrity, and reliability of personal computer systems. Tests and integrates new hardware, systems and modifications to existing equipment and systems. Performs research/investigations, analysis, design, testing, and installation of supported hardware and software. Schedules installation of new hardware and software and modifications to existing systems. Monitors performance of hardware and its capacity in all assigned locations. Recommends and implements enhancements to existing hardware and systems.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Communications Analyst - Intermediate**

**Category Description:** Under general supervision, assists Senior Level Communications Analyst or Department Manager in the planning, design, and implementation of communications networks. Responsible for providing assistance and technical support for network design activities. Assists in the review/assessment of user needs. May conduct feasibility studies for projects. May assist in the evaluation and selection of equipment. Typically requires two to four years experience in telecommunications with particular emphasis in traffic engineering and network design. Frequently reports to Data/Voice Communications Management or Internal Communications Systems Consultant.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Communications Analyst - Senior**

Labor Category

APPENDIX A

Category Description: Under general direction, assists in the planning, design, and implementation of communications networks. Responsible primarily for the assessment and optimization of network design through review and assessment of user needs. Conducts feasibility studies for large projects, develops requests for proposal, evaluates vendor products, and makes recommendations on selection. May function as lead position providing guidance and training to less-experienced analysts. Typically requires at least five years of experience in telecommunications with strong emphasis in network design, traffic engineering, equipment vendors, and carriers. Frequently reports to a Data/Voice Communications Manager or Internal Communications Systems Consultant.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Communications Facility Engineer

Category Description: Provides technical direction and engineering knowledge for communications systems infrastructure activities, including planning, designing, and implementing communications infrastructure requirements for buildings and systems. Ensures that adequate and appropriate planning is provided to direct building architects and planners in building communications spaces and media pathways meet industry standards.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Communications Installer

Category Description: Assists in the planning, design, and implementation of communications networks. Responsible for providing assistance and technical support for network design activities. Assists in the review/assessment of user needs. Performs feasibility studies for small projects. Assists in the evaluation and selection of equipment.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Communications Transmission Engineer

Labor Category

APPENDIX A

Category Description: Provides technical direction and engineering knowledge for communications activities including planning, designing, installing and maintaining large communications networks. Develops, operates, and maintains voice, wireless, video, and data communications systems. Provides complex engineering or analytical tasks and activities associated with one or more technical areas within the communications function.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Computer Operations Manager

Category Description: Responsible for all activities relating to the operation of centralized data processing equipment and peripheral information systems equipment. Establishes detailed schedules for the utilization of all equipment in the computer operations section to obtain maximum utilization. Assigns personnel to various operations and directs their activities. Reviews and evaluates work and prepares performance reports. Confers with and advises subordinates on administrative policies and procedures, technical problems, priorities, and methods. Consults with personnel in other information systems sections to coordinate activities. Prepares activity and progress reports regarding the computer operations section. Frequently reports to a Director of Information Systems Operations.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Consultant

Category Description: Works with end user groups to evaluate and solve technical problems. Evaluates existing systems and/or user needs to analyze, design, recommend, and implement system changes.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Custom Programmer

Labor Category

APPENDIX A

Category Description: Knowledge of web and client server systems utilizing relational database architectures in a distributed systems environment. Working knowledge of data warehouse development and smart client development techniques. Expertise in Oracle and Open Source technologies. Strong software design skills. Functional titles include software engineer, software analyst, software developer, database administrator, etc. Participate in all aspects of development, including gathering requirements, designing, installation, software maintenance, and software enhancements.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Mathematics, or related field.

Data Architect

Category Description: Designs and builds relational databases. Develops strategies for data acquisitions, archive recovery, and implementation of a database. Works in a data warehouse environment, which includes data design, database architecture, metadata and repository creation. Translates business needs into long-term architecture solutions. Defines, designs, and builds dimensional databases. Develops data warehousing blueprints, evaluating hardware and software platforms, and integrating systems. Evaluates reusability of current data for additional analyses. Reviews object and data models and the metadata repository to structure the data for better management and quicker access.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Data Communications Manager - Planning & Implementation

Category Description: Ensures that adequate and appropriate planning is provided for remote hardware and communications facilities to develop and implement methodologies for analysis, installation, and support of distributed processing client/server systems. Provides coordination in the analysis, acquisition, and installation of hardware, software, and facilities. Manages the training and efforts of a staff engaged in system and network planning, analysis and monitoring activities. Typically requires eight to ten years of experience in software/hardware LAN and WAN network design and analysis. Frequently reports to a telecommunications Department Director/Manager or Planning and Engineering Manager.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Data Entry Supervisor

Labor Category

APPENDIX A

Category Description: Supervises all data entry activities. Assigns work to personnel and directs activities. Reviews and evaluates work and prepares performance reports. Frequently reports to a Computer Operations Manager or Production Control Supervisor.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Data Security Administration Manager

Category Description: Directs and implements the necessary controls and procedures to cost-effectively protect information systems assets from intentional or inadvertent modification, disclosure, or destruction. Provides guidance and direction for the physical protection of information systems assets to other functional units. Provides reports to superiors regarding effectiveness of data security and makes recommendations for the adoption of new procedures. Assigns work to subordinates, monitors performance, and conducts performance appraisals. Interviews and makes recommendations for additional staff.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Data Security Analyst - Intermediate

Category Description: Under general supervision, performs all procedures necessary to ensure the safety of information systems assets and to protect systems from intentional or inadvertent access or destruction. Interfaces with user community to understand their security needs and implements procedures to accommodate them. Ensures that user community understands and adheres to necessary procedures to maintain security. Conducts accurate evaluation of the level of security required. Provides management with status reports. Frequently reports to a Data Security Administration Manager.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Data Security Analyst - Senior

**Category Description:** Under general direction, performs all procedures necessary to ensure the safety of information systems and to protect systems from intentional or inadvertent access or destruction. Interfaces with user community to understand their security needs and implements procedures to accommodate them. Ensures that user community understands and adheres to necessary procedures to maintain security. May require familiarity with domain structures, user authentication, and digital signatures. Conducts accurate evaluation of the level of security required. May require understanding of firewall theory and configuration. Must be able to weigh business needs against security concerns and articulate issues to management.

**Minimum Experience:** 3 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Data Warehousing Administrator

**Category Description:** Coordinates the data administration technical function for both data warehouse development and maintenance. Plans and oversees the technical transitions between development, testing, and production phases of the workplace. Facilitates change control, problem management, and communication among data architects, programmers, analysts and engineers. Establishes and enforces processes to ensure a consistent, well-managed and well-integrated data warehouse infrastructure. Expands and improves data warehouse to include data from all functions of the organization using data manipulation, transformation and cleansing tools. Requires three years of experience in the field.

**Minimum Experience:** 3 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Data Warehousing Analyst

**Category Description:** Works in a data warehouse environment, which includes data design, database architecture, metadata and repository creation. Reviews data loaded into the data warehouse for accuracy. Responsible for the development, maintenance and support of an enterprise data warehouse system and corresponding data marts. Troubleshoots and tunes existing data warehouse applications. Conducts research into new data warehouse applications and determines viability for adoption. Assists in establishing development standards. Evaluates existing subject areas stored in the data warehouse. Incorporates existing subject areas into an enterprise model. Creates new or enhanced components of the data warehouse. Requires two years experience in the field.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Data Warehousing Programmer

Category Description: Responsible for product support and maintenance of the data warehouse. Performs data warehouse design and construction. Codes and documents scripts and stored procedures. Designs/implements data strategy methods. Develops appropriate programs and systems documentation. Assists with Metadata repository management. Prepares/implements data verification and testing methods for the data warehouse. Creates index and view scripts. Requires two years experience in the field.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Data Warehousing Project Manager

Category Description: Works in a data warehouse environment, which includes data design, database architecture, metadata and repository creation. Responsible for leading data warehouse team in development and enhancements of the data warehouse user interface. Establishes user requirements. Creates new standards and procedures related to end user and internal interface development. Works with Data Architect on technical issues and system architecture definition. Translates high-level work plans and converts to detailed assignments for team members. Monitors status of assignments and reviews work for completion and quality. Typically requires more than five years of experience.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Data/Configuration Management Specialist

Category Description: Provides configuration management planning. Describes provisions for configuration identification, change control, configuration status accounting, and configuration audits. Regulates the change process so that only approved and validated changes are incorporated into product documents and related software.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Database Administrator

Category Description: Participates in the design, creation, and maintenance of computerized databases. Responsible for quality control and auditing of databases to ensure accurate and appropriate use of data. Works with management to develop database strategies to support company needs. Consults with and advises users on access to various databases. Works directly with users to resolve data conflicts and inappropriate data usage. Directs the maintenance and use of the corporate data dictionary. Typically requires two to four years of experience.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Database Analyst/ Programmer - Intermediate

Category Description: Under general supervision, designs, implements and maintains moderately complex databases. Maintains database dictionaries and integration of systems through database design. Competent to work on most phases of database administration but may require some instruction and guidance in other phases. Requires two years experience in the field.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Database Analyst/ Programmer – Senior

Category Description: Under general direction, designs, implements and maintains complex database with respect to JCL, access methods, access time, device allocation, validation checks, organization, protection and security, documentation and statistical methods. Includes maintenance of database dictionaries, overall monitoring of standards and procedures and integration of systems through database design. Competent to work at the highest level of all phases of database management. Requires three years experience in the field.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Database Manager

Labor Category

APPENDIX A

Category Description: Responsible for all activities related to the administration of computerized databases. Assigns personnel to various projects and directs their activities. Reviews and evaluates work and prepares performance reports. Confers with and advises subordinates on administrative policies and procedures, technical problems, priorities, and methods. Consults with and advises users of various databases. Projects long-range requirements for database administration in conjunction with other managers in the information systems function as well as business function managers. Prepares activity and progress reports regarding the database management section. Typically requires five to seven years of experience.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Disaster Recovery Administrator

Category Description: Under general supervision, responsible for the overall security and integrity of organizational electronic data, data systems, and data networks. Designs and administers programs to include policies, standards, guidelines, training programs, and a viable quality assurance process for disaster recovery. Oversees and reviews the testing and implementation of software, data systems, and data networks to ensure that the integrity and security of all electronic data and data systems are adequately protected. Oversees and facilitates the preparation of an organization-wide business resumption plan. Responsible for ensuring the business resumption plan adequately addresses the organization's requirements and established time frames. Responsible for day-to-day security administration of the organization's data systems and data networks including systems access administration. Typically requires five or more years of experience in disaster recovery/business resumption planning.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Disaster Recovery Analyst

Labor Category

APPENDIX A

Category Description: Responsible for security and integrity of assigned electronic data, data systems, and data networks. Designs and administers programs to include policies, standards, guidelines, training programs and a viable quality assurance process for disaster recovery. Oversees and reviews the testing and implementation of software, data systems and data networks to insure that the integrity and security of all electronic data and data systems are adequately protected. Oversees and facilitates the preparation of an organization-wide business resumption plan. Responsible for insuring the business resumption plan adequately addresses the organization's requirements and established time frames. Requires five years experience in the field.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Documentation Specialist - Intermediate

Category Description: Under general supervision, prepares and/or maintains systems, programming, and operations documentation, including user manuals. Maintains a current internal documentation library. Competent to work on most phases of documentation.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Documentation Specialist - Senior

Category Description: Under general supervision, is responsible for preparing and/or maintaining systems, programming, and operations documentation, procedures, and methods including user manuals and reference manuals. Maintains a current internal documentation library. Provides or coordinates special documentation services as required. Competent to work at the highest level of all phases of documentation. May act as project leader for large positions.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

E-Business Manager

Category Description: Sets direction and guides action plans and priorities of electronic commerce, marketing and communications. Develops and facilitates organizational models and structure changes needed to meet the evolving electronic business strategies. Establishes and implements enterprise-wide business systems.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Electronic Data Interchange (EDI) Manager

Category Description: Responsible for daily electronic data interchange (EDI) operations of an organization. Develops and executes strategies for Internet-based interchange capabilities. Coordinates and implements new EDI methods and systems and enhances and upgrades the existing systems. Finds EDI solutions for business operations. Establishes and maintains communications and trading partner routings, including online orders and fulfillment systems. Audits the quality of data provided, provides security and backup, and ensures system disaster recovery processes are in place. Resolves trading partner's technical problems involving EDI. Develops technical design documentation. Ensures customer/vendor agreements meet legal requirements. Responsible for internal training of EDI and related staff.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Electronic Data Interchange (EDI) Specialist

Category Description: Provides support for EDI database analysis, design, and operations. Establishes and maintains communications within organization and with partners. Conducts and manages product evaluations. Provides product installation, configuration, and training. Performs systems maintenance to update records, specifications, and operating procedures of partner systems. Maintains EDI account transaction activities. Frequently reports to an Electronic Data Interchange Manager.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Electronic Mail Coordinator

Category Description: Monitors servers, replication, and mail routing. Creates user accounts and maintains security levels on databases. Provides first-level telephone support and troubleshoots. Monitors existing messaging infrastructure and server usage, ensuring proper working order.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Engineering Subject Matter Specialist

Category Description: Provides technical knowledge and analysis of highly specialized applications and operational environment, high-level functional systems analysis, design, integration, documentation, and implementation advice on exceptionally complex problems that necessitate high-level knowledge of the subject matter for effective implementation. Participates as needed in all phases of software development with emphasis on the planning, analysis, modeling, simulation, testing, integration, documentation and presentation phases.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### ERP Business Analyst - Intermediate

Category Description: Under general supervision, serves as subject matter expert associated with content, processes, and procedures associated with enterprise applications. Applies functional knowledge to design and customize workflow systems that provide seamless integration for client/server applications. Writes functional requirements, develops test plans, and works with production issues.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### ERP Business Analyst - Senior

Category Description: Under general direction, serves as senior subject matter expert associated with content, processes, and procedures associated with ERP. Defines detailed requirements, analyzes business needs, and validates solutions with the client. Details requirements through product development and other functions to support the project team. Monitors other business analysts in software development methods and processes and implementation of those methods. Evaluates development projects and assists in tailoring the development process to meet the project needs.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### ERP Business/Architectural Specialist

Category Description: Adapts functional business requirements and processes to technical solutions based upon comprehensive enterprise application solution sets. Enterprise resource planning and management processes, including but not limited to: knowledge management, investment analysis, data warehousing, e-commerce, return on investment analysis, human resource analysis, material management and logistics, supply chain management, procurement, ordering, manufacturing, decision support, and information dissemination.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**ERP Programmer**

**Category Description:** Under general supervision, works primarily in ERP client/server enterprise application. Designs and develops all aspects of data conversion. Builds application tables, panels, and reports. Codes individual modules and complex functions. Develops application tables, panels, and reports for projects. Responsible for software integration and external interface development. Troubleshoots and resolves testing issues. Responsible for technical documentation.

**Minimum Experience:** 2 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Graphics Specialist**

**Category Description:** Responsible for graphics design and use, operation, and setup of computer graphic systems for business communications. Executes graphic projects and assists in coordination of all graphic production scheduling. Coordinates production support with outside vendors, as needed. Ensures that graphic projects are completed on time, within budget, and to user's satisfaction. Interfaces with users to determine scope of project and best graphic medium. Trains other personnel in proper use of computer graphic equipment. Troubleshoots computer equipment problems and performs minor preventive maintenance. Frequently reports to a department manager or information systems management.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Groupware Specialist**

**Category Description:** Responsible for the implementation, maintenance, and support of organization messaging system. May work closely with first tier support staff to solve system problems. Ensures smooth integration of all groupware systems in a particular environment. Provides technical support on local groupware replication and client dial-up access issues. Prepares documentation that will assist in the maintenance of the groupware system. May serve as an internal consultant to developers, assisting them in the area of server supports, security, ID files, and other development issues that will aid the process. Requires solid working knowledge of WANs, LANs, and telecommunication concepts as they relate to the groupware system and database replication.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Help Desk Coordinator - Intermediate**

## Labor Category

## APPENDIX A

Category Description: Under general supervision, responds to and diagnoses problems through discussions with users. Includes problem recognition, research, isolation, and resolution steps. Typically is able to resolve less complex problems immediately, while more complex problems are assigned to senior level support. May involve use of problem management database and help desk systems.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Help Desk Coordinator - Senior

Category Description: Under general direction, responsible for ensuring the timely process through which problems are controlled. Includes problem recognition, research, isolation, resolution, and follow-up steps. Requires experience and understanding of MIS environment. Typically involves use of problem management database and help desk system. May provide guidance/training for less-experienced personnel.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Help Desk Manager

Category Description: Has overall responsibility for help desk operations associated with the identification, prioritization and resolution of reported problems. Ensures that all phases of help desk support are properly coordinated, monitored, logged, tracked and resolved appropriately. May maintain responsibility for development, maintenance and integrity of help desk software. Requires 3 years experience in the field.

Minimum Experience: 4 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Help Desk Specialist

Category Description: Provides support to end users on a variety of issues. Identifies, researches, and resolves technical problems. Responds to telephone calls, email and personnel requests for technical support. Documents, tracks, and monitors the problem to ensure a timely resolution.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Help Desk Support Services Specialist - Intermediate

Category Description: Under general supervision, provides second-tier support to end users for either PC, server, or mainframe applications and hardware. Handles problems that the first-tier of help desk support is unable to resolve. May interact with network services, software systems engineering, and/or applications development to restore service and/or identify and correct core problem. Simulates or recreates user problems to resolve operating difficulties. Recommends systems modifications to reduce user problems. Maintains currency and high level of technical skill in field of expertise. Escalates more complex problems to senior level.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Help Desk Support Services Specialist - Senior

Category Description: Under general direction, provides second-tier support to end users for either PC, server, or mainframe applications and hardware. Handles problems that the first-tier of help desk support is unable to resolve. May interact with network services, software systems engineering, and/or applications development to restore service and/or identify and correct core problem. Simulates or recreates user problems to resolve operating difficulties. Recommends systems modifications to reduce user problems. Maintains currency and highest level of technical skill in field of expertise.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Information Assurance Development Engineer

Category Description: Analyzes and defines security requirement for computer systems which may include mainframes, workstations, and personal computers. Designs, develops, engineers, and implements solutions that meet security requirements. Provides integration and implementation of the computer system security

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Information Assurance Engineer

Category Description: Establishes and satisfies complex system-wide information security requirements based upon the analysis of user, policy, regulatory, and resource demands. Supports customers at the highest levels in the development and implementation of doctrine and policies. Applies know-how to government and commercial common user systems, as well as to dedicated special purpose systems requiring specialized security features and procedures.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Assurance Network Specialist**

**Category Description:** Analyzes general information assurance-related technical problems and provides basic engineering and technical support in solving these problems. Designs, develops, engineers, and implements solutions that meet network security requirements. Performs vulnerability/risk analyses of computer systems and applications during all phases of the system development life

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Assurance Systems/Network Specialist**

**Category Description:** Installs, configures and maintains organization's operating systems. Analyzes and resolves problems associated with server hardware, NT, applications software. Detects, diagnoses, and reports NT related problems on both NT server and NT desktop systems. Performs a wide variety of tasks in software/hardware maintenance and operational support of NT Server systems.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Center Consultant**

**Category Description:** Under general supervision of Information Center Manager, may support unlimited end user groups. Works with users to solve problems with available technology including hardware, software and peripherals. Studies and analyzes systems needs, trains users on software and hardware, handles troubleshooting, and provides quality assurance review of user systems. Acts as project manager, typically performs time estimates, and regularly reviews status of projects. May have specialization in particular software that would be utilized in an end user environment. Keeps abreast of technological developments and may install new hardware and software for user groups. Frequently reports to an Information Center Manager.

**Minimum Experience:** 3 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Center Specialist**

**Category Description:** Under general direction, advises and assists users in problem-solving activities using information center tools. Assists in the selection and installation of information center tools. Evaluates new and existing software products. Competent to work at the highest technical level of all phases of information center activities.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Security Business Analyst**

Category Description: Determines enterprise information security standards. Develops and implements information security standards and procedures. Ensures that all information systems are functional and secure.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Services Consultant**

Category Description: Top-level technical expert supporting unlimited end user groups. Works with user groups to solve business problems with available technology including hardware, software, databases, and peripherals. Requires high level of diverse technical experience related to studying and analyzing systems needs, systems development, systems process analysis, design, and re-engineering. Has skills and experience related to business management, systems engineering, operations research, and management engineering. Typically requires specialization in particular software or business application utilized in an end user environment. Keeps abreast of technological developments and applications.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Systems Auditor - Intermediate**

Category Description: Under general supervision, audits moderately complex new and existing information systems applications to ensure that appropriate controls exist, that processing is efficient and accurate, and that systems and procedures are in compliance with corporate standards. Competent to work on most phases of information systems auditing.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Systems Auditor - Senior**

Category Description: Under general direction, audits the most complex new and existing information systems applications to ensure that appropriate controls exist, that processing is efficient and accurate, and that information systems procedures are in compliance with corporate standards. Competent to work at the highest level of all phases of information systems auditing.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Information Systems Training Specialist - Intermediate**

Labor Category

APPENDIX A

Category Description: Under general supervision, organizes and conducts moderately complex training and educational programs for information systems or user personnel. Maintains records of training activities, employee progress, and program effectiveness. Competent to work on most phases of information systems training.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Information Systems Training Specialist - Senior

Category Description: Under general direction, organizes, prepares, and conducts complex training and educational programs for information systems or user personnel. May design and develop in-house programs. Maintains records of training activities, employee progress, and program effectiveness. Competent to work at the highest level of all phases of information systems training.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Internal Communications Systems Consultant

Category Description: Provides systems guidance for current and proposed investments in telecommunications and network facilities and/or services from the development of communications software through financial implementation review. Researches present and future communication technologies. Works closely with system users to provide direction/assistance in identification and resolution of user problems. May supervise a group of planning analysts responsible for research/technical assistance for the user group. Typically requires eight to ten years of experience in telecommunications with emphasis on systems analysis, LAN/WAN telecommunications network design, and traffic engineering.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

IT Subject Matter Specialist

Category Description: Provides extremely high-level subject matter proficiency for work described in the task. Provides advanced technical knowledge and analysis of highly specialized applications and operational environment, high-level functional systems analysis, design, integration, documentation, training, and implementation advice on complex problems that require doctorate level knowledge of the subject matter for effective implementation.

Minimum Experience: 3 years experience

Education Requirement: Master's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

LAN Administrator - Intermediate

Category Description: Under general supervision, responsible for the acquisition, installation, maintenance, and usage of the organization's local area network. Manages LAN performance and maintains LAN security. Ensures that security procedures are implemented and enforced. Installs all network software. Evaluates, develops and maintains telecommunications systems. Troubleshoots LAN problems. Establishes and implements LAN policies, procedures, and standards and ensures their conformance with information systems and organization objectives. Trains users on LAN operation. Typically requires two to four years of experience. Frequently reports to a PC support manager or Senior LAN Administrator.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### LAN Administrator - Senior

Category Description: Under general direction, responsible for administration and day-to-day operation of organization's local area network (LAN). Provides integrated team support and maintenance of LAN hardware and software. Maintains integrity of the LAN hardware and software. Installs LAN software upgrades, including planning and scheduling, testing and coordination. Studies vendor products to determine those which best meet organization needs; assists in presentation of information to management resulting in purchase, and installation of hardware, software, and telecommunications equipment. Performs LAN security procedures, including implementing login requests. Evaluates new products and technologies to determine impact on existing system configurations. Prepares proposals, cost/benefit analyses, and feasibility studies. Provides liaison support between the PC/LAN team, vendors and internal support group as needed. Typically requires five to seven years of experience. Frequently reports to an information systems executive.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### LAN Support Technician - Intermediate

Category Description: Under general supervision, monitors and responds to technical control facility hardware and software problems utilizing hardware and software testing tools and techniques. May interface with vendor support service groups to ensure proper escalation during outages or periods of degraded system performance. May assist with installation of terminals and associated hardware. May provide LAN server support. Requires strong knowledge of PC/LAN communications hardware/software, in a multi-protocol environment, and network management software. Typically requires two to four years experience in data communications troubleshooting.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**LAN Support Technician - Senior**

**Category Description:** Under general direction, monitors and responds to complex technical control facility hardware and software problems utilizing a variety of hardware and software testing tools and techniques. Provides primary interface with vendor support service groups or provides internal analysis and support to ensure proper escalation during outages or periods of degraded system performance. May provide LAN server support. Requires extensive knowledge of PC/LAN communications hardware/software in a multi-protocol environment and network management software. May function as lead position providing guidance and training for less-experienced technicians. Typically requires at least four years of experience in data communications troubleshooting.

**Minimum Experience:** 4 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**LAN/WAN Administrator**

**Category Description:** Monitors LAN, WAN, and servers. Provides batch monitoring, tape back-up, and restoration. Administers mail system and implements new database architecture. Monitors and conducts performance evaluation of networks. Supports, installs, maintains, and troubleshoots all local area and wide area networking devices and related software for branch offices and internal and external networks.

**Minimum Experience:** 2 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**LAN/WAN Integrator**

**Category Description:** Responsible for the overall integration of the enterprise-wide network including the planning, design, installation, maintenance, management, and coordination of the corporate LAN/WAN (may include local, metropolitan, and wide area networks). Has responsibility for technical architecture and recommendations related to LAN/WAN. Is typically a top-level technical contributor with advanced knowledge and experience in the area of local and wide area networking, communications, and related hardware/software. Maintains high level of technical expertise and studies vendor products to determine those which best meet organization needs. Presents information to management, which may result in the purchase and installation of hardware, software, and telecommunications equipment. Recommends network security procedures and policies. Knowledgeable in a multi-platform operating environment. May work with Voice and/or Data Communications Analysts.

**Minimum Experience:** 3 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**LAN/WAN/MAN Administrator**

Labor Category

APPENDIX A

Category Description: Monitors LAN, WAN, MAN, and servers. Provides batch monitoring, tape back-up, and restoration. Supports, installs, maintains, and troubleshoots all local area and wide area networking devices and related software for branch offices and internal and external networks.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Microsoft Programmer

Category Description: Knowledge in Microsoft technologies (Access, Excel, Powerpoint, Sharepoint) in a distributed systems environment. Working knowledge of data structures, analytical, and client development techniques. Strong software design skills. Functional titles include software engineer, software analyst, .NET developer, SQL Server administrator, etc. Participate in all aspects of Microsoft development, including gathering requirements, designing, installation, software maintenance, and software enhancements.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Mathematics, or related field

Network Control Technician

Category Description: Tests and analyzes all elements of complex network facilities (including power, software, communications devices, lines, modems, and terminals). Monitors and controls the performance and status of the network resources. Utilizes software and hardware tools and identifies and diagnoses complex problems and factors affecting network performance.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Engineer - Intermediate

Category Description: Under general supervision, oversees the purchase, installation, and support of network communications, including LAN/WAN systems. Works on problems of diverse scope where analysis of situation requires evaluation and judgment. Responsible for evaluating current systems. Assists in the planning of large-scale systems projects through vendor comparison and cost studies. Requires thorough knowledge of LAN/WAN systems, networks, and applications. Typically requires two to five years of experience.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Engineer - Senior

Labor Category

APPENDIX A

Category Description: Under general direction, manages the purchase, installation, and support of network communications, including LAN/WAN systems. Responsible for evaluating current systems. Works on complex problems where analysis of situation requires in-depth evaluation of various factors. Plans large-scale systems projects through vendor comparison and cost studies. Provides work leadership and training to lower level network engineers. Requires expert knowledge of LAN/WAN systems, networks, and applications. Typically requires at least five years of experience.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Operations Supervisor

Category Description: Provides first level guidance/direction (either as a full-time supervisory position or on a project management basis) to network operation and maintenance analysts, technicians, and/or engineers. Performs technical analysis of complex software, hardware, and transmission facility using various diagnostic tools in support of efficient network operations. Provides guidance/direction for engineering efforts and test and evaluation programs. Performs on-site engineering when required. Typically requires five years of experience in operations, maintenance, and sustained engineering of LAN to WAN internetworking. Frequently reports to a Regional Manager or Operations Manager.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Planning Analyst - Intermediate

Category Description: Under general supervision, plans and evaluates moderately complex existing network systems and makes recommendations for resources required to maintain and/or expand service levels. Provides assistance in network planning, engineering, architecture, and the development of technical standards and interface applications. Evaluates new products as assigned. Provides resolution for network problems. Typically requires four to six years of experience in telecom networks. Frequently reports to a higher Network Planning position or a Telecommunications Department Director/Manager.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Planning Analyst - Senior

Labor Category

APPENDIX A

Category Description: Under general direction, plans and evaluates complex existing network systems and makes recommendations for resources required to maintain and/or expand service levels. Provides highly skilled technical assistance in network planning, engineering, and architecture. Develops technical standards and interface applications, identifies and evaluates new products, and provides resolution for network problems. May interface with vendors to identify and purchase hardware and software. May function as lead position for other Network Planning Analysts. Typically requires six to eight years of experience in telecom networks. Frequently reports to a Telecommunications Department Director/Manager or a higher Network Planning position.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Planning Manager

Category Description: Responsible for long-term strategic planning to ensure network capacity meets current and future network requirements including planning for remote hardware and communications facilities, development and implementation of methodologies for system analysis, installation, and support. Defines and develops methodology to ensure compatibility of all software and hardware products at each facility. Provides ongoing coordination in the analysis, acquisition, and installation of remote hardware and software. May supervise Network Planning Analysts. Typically requires six to eight years of experience. Frequently reports to a Telecommunications Department Director/Manager or Planning and Engineering Manager.

Minimum Experience: 5 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Systems Administrator

Category Description: Provides system administration of Network, Web, and/or communication systems, including Local Area Network (LAN) and Wide Area Network (WAN) systems, involving network security. Prepares technical implementation plans that provide integrated solutions including actions, milestones, timelines and critical paths required for complete solutions.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network Systems Manager

Labor Category

APPENDIX A

Category Description: Supervises all personnel engaged in the operation and support of network facilities, including all communications equipment in large scale or multi-shift operations. Supervises complex operations that involve two or more additional functions such as, but not limited to, network operations, systems security, systems software support, and production support activities.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Network/Hardware Support Technician

Category Description: Monitors and responds to hardware, software, and network problems. Provides the routine testing and analysis of all elements of the network facilities (including power, software, communications machinery, lines, modems, and terminals). Monitors and controls the performance and status of the network resources.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations Manager - Data Communications

Category Description: Manages all aspects of the daily operation for data network(s) in either a stand-alone data network environment in a voice and data separated network environment. Develops project plans for the implementation of new telecommunications technology and systems. Directs technical analysis of complex software, hardware, and transmission systems. Coordinates with vendors involved in providing communication activities.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations Manager - Voice Communications

Category Description: Manages all aspects of the daily operation for voice network(s) in either a stand-alone voice network OR in a voice and data separated network environment. Develops project plans for the implementation of new telecommunications technology and systems. Directs technical analysis of complex software, hardware, and transmission systems.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations Systems Manager

Labor Category

APPENDIX A

Category Description: Provides assistance and oversight for all information systems operations activities, including computer and telecommunications/communications operations, data entry, data control, operations support, operating systems programming, system security policy procedures, and/or web strategy and operations. Provides input to policy level discussions regarding standards and budget constraints.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations/ Technical Support Manager

Category Description: Responsible for all activities relating to technical guidance for planning, directing, and monitoring information systems operations. Plans and recommends machine modifications or additional equipment to increase the capacity of the system. Prepares operational cost estimates for current and proposed projects. Evaluates vendor proposals for purchases of hardware. May manage related outsourcing contracts and service levels. Directs compilation of records and reports concerning production, machine malfunctioning, and maintenance. May advise or consult on organizational, procedural, and workflow plans, methods, and procedures analysis. Analyzes the results of workflow plans, monitors the operating system(s) and recommends changes to improve processing and utilization. May have departmental staff responsibility. Frequently reports to an Information Systems Operations Manager or Director of Information Systems Operations.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations/Network LAN Administrator

Category Description: Supports, monitors, tests, and troubleshoots hardware and software problems pertaining to LAN. Recommends and schedules repairs. Provides end users support for all LAN-based applications. Installs and configures workstations.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Operations/Technical Support Analyst

Category Description: Provides technical guidance for directing and monitoring information systems operations. Implements machine modifications to increase the capacity of the system. Directs compilation of records and reports concerning production, machine malfunctioning and maintenance.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**PC Products Analyst**

**Category Description:** Under general supervision, analyzes and evaluates microcomputer products and systems available in the marketplace. Analyzes such products for compatibility, expandability, and ease of use and support. Recommends to management the support or nonsupport of evaluated products. Participates in the development and customization of products. Designs application options/screens compatible with mainframe applications. Prepares product development documentation regarding use of product. Frequently reports to a PC Support Manager.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**PC Systems Specialist**

**Category Description:** Under general supervision, performs analytical, technical, and administrative work in the planning, design, and installation of new and existing personal computer systems. Works on moderately complex applications. Confers with end users to determine types of hardware and software required. Writes programs to fulfill requirements or selects appropriate off-the-shelf software and modifies to suit. May maintain or utilize telecommunications protocols. Installs new hardware and maintains existing hardware. Trains end users in use of equipment and software. Frequently reports to a PC Support Manager.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**PC/LAN Mgmt Analyst - Intermediate**

**Category Description:** Under general supervision, works closely with business and management and staff on LAN support, network design, and configuration in a multi-server environment. Responsible for the installation/configuration and support of client servers, application support software, and implementation of new business software applications. Participates with client in the installation/configuration of equipment and software. Analyzes and coordinates resolution of network problems. Provides technical support and guidelines to client and systems areas through documentation. Requires experience with Token Ring.

**Minimum Experience:** 1 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**PC/LAN Mgmt Analyst – Senior**

Labor Category

APPENDIX A

Category Description: Under general direction, provides consultation to business area management and staff at the highest technical level for all aspects of PC/LAN design and configuration in a multi-server environment. Plans and coordinates the installation of new or modified Local Area Networks and installs and coordinates the resolution of network problems or malfunctions. Provides technical support and guidelines to client and systems areas through documentation. Requires experience with Token Ring.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Project Engineer

Category Description: Manages long-term IT engineering projects. Performs engineering design evaluations and works to complete projects within budget and scheduling restraints. Develops, implements, and monitors information systems policies and controls to ensure data accuracy, security, and regulatory compliance. Reviews reports of computer and peripheral equipment production, malfunction, and maintenance to determine and address problems.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Project Manager – Senior

Category Description: Responsible for all aspects of the development and implementation of assigned projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces with all areas affected by the project including end users, computer services, and client services. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans, and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to quality standards and reviews project deliverables. Manages the integration of vendor tasks and tracks and reviews vendor deliverables. Provides technical and analytical guidance to project team. Recommends and takes action to direct the analysis and solutions of problems.

Minimum Experience: 5 years experience

Education Requirement: Master's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Quality Assurance Analyst - Intermediate

Labor Category

APPENDIX A

Category Description: Under general supervision, carries out procedures to ensure that all information systems, products and services meet minimum organization standards and end-user requirements. Thoroughly tests software to ensure proper operation and freedom from defects. Documents and works to resolve all problems. Reports progress on problem resolution to management. Devises improvements to current procedures and develops models of possible future configurations. Performs workflow analysis and recommends quality improvements. Frequently reports to a Quality Assurance Manager.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Quality Assurance Analyst - Senior

Category Description: Under general direction, carries out procedures to ensure that all information systems, products and services meet organization standards and end-user requirements. Performs and leads tests of software to ensure proper operation and freedom from defects. May create test data for applications. Documents and works to resolve all complex problems. Reports progress on problem resolution to management. Devises improvements to current procedures and develops models of possible future configurations. Acts as information resource about assigned areas to technical writers and other Quality Assurance Analysts. Performs complex workflow analysis and recommends quality improvements.

Minimum Experience: 4 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Quality Assurance Specialist

Category Description: Provides development of project Software Quality Assurance Plan and the implementation of procedures that conforms to the requirements of the contract. Provides an independent assessment of how the project's software development process is being implemented relative to the defined process and recommends methods to optimize the organization's process.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Security Coordinator

Category Description: Coordinates, develops, and evaluates security programs for an organization.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Site Manager**

**Category Description:** Provides applications systems analysis and programming activities for a Government site, facility or multiple locations. Prepares long and short-range plans for application selection, systems development, systems maintenance, and production activities and for necessary support resources.

**Minimum Experience:** 3 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Software Architect**

**Category Description:** Works independently designing and developing new software products or major enhancements to existing software. May lead a large development team in the design of highly complex software systems. Acts as highest-level technical expert, addressing problems of systems integration, compatibility, and multiple platforms. Responsible for project completion. Performs feasibility analysis on potential future projects to management.

**Minimum Experience:** 4 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Software Developer – Intermediate**

**Category Description:** Under general supervision, develops codes, tests, and debugs new software or enhancements to existing software. Has good understanding of business applications. Works with technical staff to understand problems with software and resolve them. Resolves customer complaints with software and responds to suggestions for improvements and enhancements. May assist in development of software user manuals. Requires two years experience in the

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Software Developer – Senior**

**Category Description:** Under general direction, participates as high-level technical expert in design development, coding, testing, and debugging new software or significant enhancements to existing software. Works with technical staff to understand problems with software and develops specifications to resolve them. Resolves customer complaints and responds to suggestions for improvements and enhancements. Participates in the development of software user manuals. May act as team leader on less complex projects. Assists in training less experienced software development staff. Requires five years experience in the

**Minimum Experience:** 3 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Software Systems Engineer - Intermediate**

Labor Category

APPENDIX A

Category Description: Under general supervision, works from specifications to develop or modify moderately complex software programming applications. Assists with design, coding, benchmark testing, debugging, and documentation of programs. Applications generally deal with utility programs, position control language, macros, subroutines, and other control modules. Competent to work on most phases of software systems programming applications, but requires instruction and guidance in other phases.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Software Systems Engineer - Senior

Category Description: Under general direction, formulates and defines specifications for complex operating software programming applications or modifies/maintains complex existing applications using engineering releases and utilities from the manufacturer. Designs, codes, tests, debugs, and documents those programs. Responsible for applications dealing with the overall operating system, such as sophisticated file maintenance routines, large telecommunications networks, computer accounting, and advanced mathematical/scientific software packages. Competent to work at this highest technical level on all phases of software systems programming applications. May have responsibility for the evaluation of new and existing software products. May assist other systems programmers to effectively utilize the system's technical software.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Strategic Planner

Category Description: Provides strategic planning of large projects or a significant segment of a strategic planning portion of a large complex project. Provides the overall approach to clarify mission statements so they can be used as springboards in envisioning their desired future. Assists in developing mission and vision statements, subsequent goal delineation, provides guidance for building operational plans and specifying measurable outcomes to include capital outlay planning efforts in a consolidated strategic planning process and prioritizes those initiatives.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Systems Administrator - Intermediate

Category Description: Under general supervision, responsible for installing, configuring, and maintaining operating system workstations and servers, including web servers, in support of business processing requirements. Performs software installations and upgrades to operating systems and layered software packages. Schedules installations and upgrades and maintains them in accordance with established IT policies and procedures. Monitors and tunes the system to achieve optimum performance levels. Ensures workstation/server data integrity by evaluating, implementing, and managing appropriate software and hardware solutions. Ensures data/media recoverability by implementing a schedule of system backups and database archive operations. Supports media management through internal methods and procedures or through offsite storage and retrieval services. Develops and promotes standard operating procedures. Conducts routine hardware and software audits of workstations and servers to ensure compliance with established standards, policies, and configuration guidelines. Develops and maintains a comprehensive operating system hardware and software configuration database/library of all supporting documentation.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Systems Administrator - Senior

Category Description: Under general direction, responsible for activities related to system administration. Assigns personnel to various projects, directs their activities, and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Responsible for the installation, maintenance, configuration, and integrity of computer software. Implements operating system enhancements that will improve the reliability and performance of the system.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Systems Analysis and Programming Director

Category Description: Develops software within an organization. Directs the software engineering function in developing, releasing, and maintaining software applications/operating systems according to business needs.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Systems Engineer

## Labor Category

## APPENDIX A

Category Description: Performs a variety of systems engineering tasks and activities that are broad in nature and are concerned with major systems design, integration, and implementation, including personnel, hardware, software, budgetary, and support facilities and/or equipment. Provides quality assurance review and the evaluation of new and existing software products.

Minimum Experience: 2 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Systems Management Technologist

Category Description: Analyzes, develops, operates, and maintains software libraries and catalogs. Provides support and direction for user groups in the use of the software/hardware systems and programs to support an integrated system.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Technical Editor

Category Description: Responsible for content of technical documentation. Checks author's document for spelling, grammar and content problems (e.g., missing instructions or sections; redundant or unnecessary sections). Accuracy of content may fall under this position or the programmer, depending on the expertise of the editor. Ensures that documents follow the style laid out in the organization's style guide. May also be responsible for maintaining the style guide. Suggests revisions to the style guide as appropriate. Editor is often a technical writer who has moved to this position. Note: This description is for a technical editor in a large software house or an editor in a technical lab, which produces papers for publication. Newsletter, newspaper, or magazine editors should not be matched to this position.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

### Technical Support Professional

Category Description: Identifies requirements and perform system level assessments; analyze requirements and develops detail design specifications to meet those requirements. Functional titles include Help Desk support technician, cable installer, Support Technician, Network Administrator, Desktop Support technician, etc. Responsible for primary system/network architecture planning, design, and implementation; provide desktop support; minor cabling; basic application support; help desk support; basic operating system support; computer hardware support; computer hardware repair; and participate in engineering design meetings and collaborative work groups.

Minimum Experience: 2+ years experience

Education Requirement: High school diploma or equivalent

**Technical Writer**

Category Description: Writes a variety of technical articles, reports, brochures, and/or manuals for documentation for a wide range of uses. Coordinates the display of graphics and the production of the document.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Telecommunications Analyst/Technician**

Category Description: Provides maintenance of the switching equipment. Performs more complex activities for routine maintenance on switch. Reads and interprets circuit diagrams and electrical schematics.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Telecommunications Engineer/ Analyst – Intermediate**

Category Description: Under general supervision, responsible for moderately complex engineering and/or analytical activities associated with one or more technical areas within the telecom function (such as, but not limited to, network design, engineering, implementation, or operations/user support). Typically requires two to four years of technical telecom experience.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Telecommunications Engineer/ Analyst – Senior**

Category Description: Under general direction, responsible for complex engineering and/or analytical tasks and activities associated with one or more technical areas within the telecom function such as, but not limited to, network design, engineering, implementation, or operations/user support. Typically requires six to eight years of technical telecom experience.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Telecommunications Manager - Multiple Incumbents**

Category Description: A multiple incumbent position with broad management responsibility for all areas of the telecommunications function. Position may be structured to address the needs of individual "customer" groups (e.g., organization divisions or business lines) or may reflect total management responsibilities (including planning, engineering, implementation, and operations) for either voice or data communications in a separated network environment. Manages/coordinates day-to-day planning, design, operations, maintenance, and resource allocation including client server support and strategic and tactical planning. Coordinates with customers, vendors, and corporate management. May be responsible for billing systems. Interfaces with Senior/Executive Management to coordinate telecommunications plans with overall business plan. Frequently reports to Telecommunications Management or information systems management.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications Manager - Single Incumbent

Category Description: A single incumbent position with broad management responsibility for all areas of the telecommunications function. Manages and coordinates the day-to-day planning, design, operations, and maintenance of the telecommunications voice and/or data networks including client server support consistent with customer needs, organization objectives, and technological resources. Responsible for telecommunications strategic and tactical planning. Coordinates with customers, vendors, and corporate management. Responsible for department resource allocation. May be responsible for billing systems. Interfaces with Senior/Executive Management to coordinate telecommunications plans with organization's business plan.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications Network Help Desk

Category Description: Responds to user complaints to research complex problems associated with the organization's telecommunications networks (voice and/or data). Diagnoses problem source through discussions with users. Coordinates with internal company support and operations groups and/or with vendors to resolve problems. Follows up with users to ensure problem has been resolved. Develops supporting documentation of all activities.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications Programmer/ Systems Analyst – Intermediate

Category Description: Under general supervision, develops telecommunications solutions to address user needs. May interface with users to define needs. Assists in the design, development, and testing of communications software interface programs. Usually involved in the implementation and testing of projects. Requires knowledge of communication protocols, hardware, and real-time operating system programming. Requires proficiency in one or more programming languages such as Assembler, FORTRAN, or "C". Typically requires two to four years of experience in telecommunications programming.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications Programmer/ Systems Analyst – Senior

Category Description: Under general direction, develops telecommunications software solutions to address user needs. Interfaces with users to define needs. Designs, develops, and tests complex communications software interface programs. Primary responsibilities usually include technical feasibility studies and design phases of project. Requires strong knowledge of communication protocols, hardware, and real time operating system programming. May serve as project leader for lower level programmers. Requires high level of proficiency in one or more programming languages such as Assembler, FORTRAN, or "C". Typically requires four to six years of experience in telecommunications programming.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications Technician

Category Description: Installs, troubleshoots, repairs and maintains telecommunications equipment. Provides reports, completes requests for new service, determines methodology for installing telephone service, determines appropriateness of moderate equipment changes or modifications, call switches, test trunks, test links and installs communication circuits.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Telecommunications/Communications Integration Engineer

Labor Category

APPENDIX A

Category Description: Provides technical direction and analysis for telecommunication activities, including planning, designing, integrating, installing and maintaining large-scale telecommunications/ communications networks and services with computer systems. Applies telecommunications/communications engineering principles and theory to propose design and configuration alternatives. Analyzes network performance, usage and traffic flows, accesses and interfaces, transmission techniques, and protocols to interface with computer systems.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Test Engineer

Category Description: Subject matter specialist providing testing know-how in for the support of user requirements of complex to highly complex software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

UNIX Systems Administrator

Category Description: Responsible for the installation, configuration, and maintenance of UNIX operating systems. Recognizes and troubleshoots problems with server hardware and applications software. Establishes and documents standards and procedures for management review. Requires extensive knowledge of computer operations and familiarity with shell and kernel programming. Typically requires two to four years of experience.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Voice Communications Administrator

Category Description: Monitors and responds to facility hardware and software problems. Assists vendor support service groups to ensure proper escalation during outages or periods of degraded system performance. Makes phone system additions, changes, and installs new station equipment. Requires knowledge of monitoring equipment.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Voice Communications Manager - Planning & Implementation

Category Description: Ensures that adequate and appropriate planning is provided for remote hardware and communications facilities to develop and implement methodologies for analysis, installation, and support of voice communications systems. Provides coordination in the analysis, acquisition, and installation of remote hardware and software. Interfaces with internal and external customers and vendors to determine system needs. Manages the training and efforts of a staff responsible for system and network planning and analysis activities. May include billing/chargeback responsibilities. Typically requires at least eight to ten years of experience in software/hardware voice network design and analysis usually in a telephone operating organization. Frequently reports to a Telecommunications Department Director/Manager or Planning and Engineering Manager.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Voice Communications Technician

Category Description: Monitors and responds to complex technical control facility hardware and software problems. Interfaces with vendor support service groups to ensure proper escalation during outages or periods of degraded system performance. Maintains PBX/systems and associated hardware.

Minimum Experience: 1 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Web Content Administrator

Category Description: Responsible for developing and providing content that will motivate and entertain users so that they regularly access the website and utilize it as a major source for information and decision making. Responsible for managing/performing website editorial activities including gathering and researching information that enhances the value of the site. Locates, negotiates and pursues content. Seeks out customers to gather feedback for website improvement and enhancements. Requires experience in production management, web page design, HTML and web graphics types and standards. Requires two years of experience in this field.

Minimum Experience: 3 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

#### Web Content Analyst

Labor Category

APPENDIX A

Category Description: Provides for development and content that will motivate and entertain users so that they regularly access the website and utilize it as a major source for information and decision-making. Provides managing/performing website editorial activities including gathering and researching information that enhances the value of the site.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Web Designer

Category Description: Under direct supervision, designs and builds web pages using a variety of graphics software applications, techniques, and tools. Designs and develops user interface features, site animation, and special effects elements. Contributes to the design group's efforts to enhance the appeal of the organization's online offerings. Designs the website to support the organization's strategies and goals relative to external communications. Typically requires one to three years of experience in the area of web design. Requires knowledge of web-based technologies including browsers ASP pages, HTML code, object-oriented technology, and graphics software.

Minimum Experience: 1 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Web Marketing Manager

Category Description: Responsible for developing and implementing the organization's web strategies for promoting products and services through strategic marketing on the website. Responsible for assisting in the creation and implementation of the web marketing plan. Works closely with design and content management team to ensure site meets marketing objectives. Monitors site access patterns to adjust strategies and plans. Requires understanding of web technologies.

Minimum Experience: 3 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Web Operations Manager

Category Description: Responsible for ongoing oversight of web strategy and operations. Develops business plan and annual budget for website function. Accountable for budget, staff planning, management, and product and service delivery. Oversees operational activities of the website(s) with specific attention aimed at content creation and website maintenance. Requires experience with web technologies and web page design.

Minimum Experience: 4 years experience

Education Requirement: Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Web Project Manager**

**Category Description:** Serves as project manager of a development team responsible for planning, developing, and deploying websites including preparation of text, graphics, audio, and video for web pages. Works directly with partners and clients to determine project scope and specifications. Coordinates the work of design and development teams to implement online designs. Reviews progress, manages resources, and ensures overall quality of completed website. Typically requires experience in management and understanding of web technologies.

**Minimum Experience:** 4 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Web Security Administrator**

**Category Description:** Under general supervision, performs all procedures necessary to ensure the safety of the organization's website and transactions across the Internet including the protection of confidential order information and external business-to-business connections. Applies Internet firewall and encryption technologies to maintain organizational and customer security. Ensures that the user community understands and adheres to established security procedures. Updates and deletes users, monitors and performs follow-up compliance violations, and develops security policies and practices and guidelines. Requires experience in Firewall/DMZ design and implementation.

**Minimum Experience:** 3 years experience

**Education Requirement:** Bachelor's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Web Security Analyst**

**Category Description:** Performs all procedures necessary to ensure the safety of the organization's website and transactions across the Internet/intranet. Applies Internet firewall technologies to maintain security. Ensures that the user community understands and adheres to necessary procedures to maintain security. Updates and deletes users, monitors and performs follow-up on compliance violations, and develops security policies, practices, and guidelines.

**Minimum Experience:** 2 years experience

**Education Requirement:** Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

**Web Software Developer**

Labor Category

APPENDIX A

Category Description: Designs, develops, troubleshoots, debugs, and implements software code (such as HTML, CGI, and JavaScript) for a component of the website. Works with graphic designers and other members of a project team to develop the site concept, interface design, and architecture of the website. Responsible for interface implementation. Integrates web applications with backend databases. Deploys large web-based transaction systems using application servers. Researches, tests, builds, and coordinates the integration of new products per production and client requirements. Requires strong navigation and site-design instincts.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

Web Technical Administrator

Category Description: Under general supervision, responsible for achieving overall technical integrity of organization's website. Maintains and upgrades hardware and software including website technical architecture related to hardware and telecommunication connectivity. Administers e-mail, chat and FTP services. Communicates router configuration changes and troubleshoots system errors and bugs. Maintains servers, creates monitoring reports and logs, and ensures functionality of links. Creates tools to ease production process. Automates routine procedures. Works on system-level services to ensure proper patch levels on applications and operating systems. Monitors database integrity. Monitors site for acceptable performance and user accessibility. Establishes backups and monitors site security. Typically requires experience in systems technologies.

Minimum Experience: 2 years experience

Education Requirement: Associate's degree in Computer Science, Engineering, Business Administration, Information Technology, or equivalent

GS35F0147T Labor Rates

SIN	Service	GSA Price with IFF
54151S	Custom Programmer	\$ 80.54
54151S	Microsoft Programmer	\$ 80.54
54151S	Technical Support Professional	\$ 80.54
54151S	Applications Programmer	\$ 73.01
54151S	Applications Systems Analyst/ Programmer – Intermediate	\$ 78.54
54151S	Applications Systems Analyst/ Programmer – Senior	\$ 95.05
54151S	Business Process Consultant	\$ 102.34
54151S	Business Subject Matter Specialist	\$ 110.81
54151S	Business Systems Analyst - Intermediate	\$ 78.06
54151S	Business Systems Analyst - Senior	\$ 93.37
54151S	Business Systems Specialist	\$ 92.24
54151S	Chief Information Security Officer	\$ 135.49
54151S	Client/Server Database Manager	\$ 99.50
54151S	Client/Server Network Architect	\$ 105.00
54151S	Client/Server Support Analyst	\$ 71.25
54151S	Communications Analyst - Intermediate	\$ 69.92
54151S	Communications Analyst - Senior	\$ 85.12
54151S	Communications Facility Engineer	\$ 84.89
54151S	Communications Installer	\$ 60.36
54151S	Communications Transmission Engineer	\$ 81.56
54151S	Computer Operations Manager	\$ 86.46
54151S	Consultant	\$ 104.99
54151S	Data Architect	\$ 100.10
54151S	Data Communications Manager - Planning & Implementation	\$ 100.14
54151S	Data Entry Supervisor	\$ 55.24
54151S	Data Security Administration Manager	\$ 97.59
54151S	Data Security Analyst - Intermediate	\$ 77.88
54151S	Data Security Analyst - Senior	\$ 93.01
54151S	Data Warehousing Administrator	\$ 87.58
54151S	Data Warehousing Analyst	\$ 84.50
54151S	Data Warehousing Programmer	\$ 83.91
54151S	Data Warehousing Project Manager	\$ 105.02
54151S	Data/Configuration Management Specialist	\$ 82.33
54151S	Database Administrator	\$ 89.39
54151S	Database Analyst/ Programmer - Intermediate	\$ 78.98
54151S	Database Analyst/ Programmer – Senior	\$ 93.37
54151S	Database Manager	\$ 102.19
54151S	Disaster Recovery Administrator	\$ 89.80
54151S	Disaster Recovery Analyst	\$ 84.69
54151S	Documentation Specialist - Intermediate	\$ 55.58
54151S	Documentation Specialist - Senior	\$ 68.20

54151S	E-Business Manager	\$ 99.21
54151S	Electronic Data Interchange (EDI) Manager	\$ 96.15
54151S	Electronic Data Interchange (EDI) Specialist	\$ 76.21
54151S	Electronic Mail Coordinator	\$ 57.53
54151S	Engineering Subject Matter Specialist	\$ 114.07
54151S	ERP Business/Architectural Specialist	\$ 106.55
54151S	ERP Business Analyst - Intermediate	\$ 87.87
54151S	ERP Business Analyst - Senior	\$ 106.94
54151S	ERP Programmer	\$ 90.89
54151S	Graphics Specialist	\$ 60.51
54151S	Groupware Specialist	\$ 78.86
54151S	Help Desk Coordinator - Intermediate	\$ 50.03
54151S	Help Desk Coordinator - Senior	\$ 60.48
54151S	Help Desk Manager	\$ 77.49
54151S	Help Desk Specialist	\$ 50.46
54151S	Help Desk Support Services Specialist - Intermediate	\$ 53.83
54151S	Help Desk Support Services Specialist - Senior	\$ 64.22
54151S	Information Assurance Development Engineer	\$ 92.86
54151S	Information Assurance Engineer	\$ 93.13
54151S	Information Assurance Network Specialist	\$ 85.72
54151S	Information Assurance Systems/Network Specialist	\$ 85.68
54151S	Information Center Consultant	\$ 85.08
54151S	Information Center Specialist	\$ 74.69
54151S	Information Security Business Analyst	\$ 88.52
54151S	Information Services Consultant	\$ 107.47
54151S	Information Systems Auditor - Intermediate	\$ 80.43
54151S	Information Systems Auditor - Senior	\$ 96.15
54151S	Information Systems Training Specialist - Intermediate	\$ 67.43
54151S	Information Systems Training Specialist - Senior	\$ 82.37
54151S	Internal Communications Systems Consultant	\$ 90.48
54151S	IT Subject Matter Specialist	\$ 120.83
54151S	LAN Administrator - Intermediate	\$ 69.85
54151S	LAN Administrator - Senior	\$ 84.73
54151S	LAN Support Technician - Intermediate	\$ 60.41
54151S	LAN Support Technician - Senior	\$ 72.52
54151S	LAN/WAN Administrator	\$ 74.87
54151S	LAN/WAN Integrator	\$ 86.24
54151S	LAN/WAN/MAN Administrator	\$ 78.63
54151S	Network Control Technician	\$ 60.84
54151S	Network Engineer - Intermediate	\$ 76.78
54151S	Network Engineer - Senior	\$ 92.94
54151S	Network Operations Supervisor	\$ 87.18
54151S	Network Planning Analyst - Intermediate	\$ 76.41
54151S	Network Planning Analyst - Senior	\$ 91.01
54151S	Network Planning Manager	\$ 101.91
54151S	Network Systems Administrator	\$ 79.47

54151S	Network Systems Manager	\$ 95.40
54151S	Network/Hardware Support Technician	\$ 61.32
54151S	Operations Manager - Data Communications	\$ 93.37
54151S	Operations Manager - Voice Communications	\$ 93.20
54151S	Operations Systems Manager	\$ 97.04
54151S	Operations/ Technical Support Manager	\$ 86.57
54151S	Operations/Network LAN Administrator	\$ 73.96
54151S	Operations/Technical Support Analyst	\$ 73.80
54151S	PC Products Analyst	\$ 61.58
54151S	PC Systems Specialist	\$ 64.94
54151S	PC/LAN Mgmt Analyst - Intermediate	\$ 67.14
54151S	PC/LAN Mgmt Analyst – Senior	\$ 80.79
54151S	Project Engineer	\$ 98.19
54151S	Project Manager – Senior	\$ 120.83
54151S	Quality Assurance Analyst - Intermediate	\$ 72.15
54151S	Quality Assurance Analyst - Senior	\$ 89.41
54151S	Quality Assurance Specialist	\$ 78.46
54151S	Security Coordinator	\$ 73.27
54151S	Site Manager	\$ 94.08
54151S	Software Architect	\$ 114.02
54151S	Software Developer – Intermediate	\$ 79.55
54151S	Software Developer – Senior	\$ 96.31
54151S	Software Systems Engineer - Intermediate	\$ 84.09
54151S	Software Systems Engineer - Senior	\$ 102.14
54151S	Strategic Planner	\$ 101.83
54151S	Systems Administrator - Intermediate	\$ 73.37
54151S	Systems Administrator - Senior	\$ 88.61
54151S	Systems Analysis and Programming Director	\$ 114.24
54151S	Systems Engineer	\$ 90.43
54151S	Systems Management Technologist	\$ 80.18
54151S	Technical Editor	\$ 65.03
54151S	Technical Writer	\$ 62.94
54151S	Telecommunications Analyst/Technician	\$ 60.70
54151S	Telecommunications Engineer/ Analyst – Intermediate	\$ 73.13
54151S	Telecommunications Engineer/ Analyst – Senior	\$ 87.74
54151S	Telecommunications Manager - Multiple Incumbents	\$ 99.95
54151S	Telecommunications Manager - Single Incumbent	\$ 94.23
54151S	Telecommunications Network Help Desk	\$ 58.27
54151S	Telecommunications Programmer/ Systems Analyst – Intermedi	\$ 74.00
54151S	Telecommunications Programmer/ Systems Analyst – Senior	\$ 89.71
54151S	Telecommunications Technician	\$ 57.67
54151S	Telecommunications/Communications Integration Engineer	\$ 86.82
54151S	Test Engineer	\$ 82.07
54151S	UNIX Systems Administrator	\$ 88.32
54151S	Voice Communications Administrator	\$ 69.46

54151S	Voice Communications Manager - Planning & Implementation	\$ 91.86
54151S	Voice Communications Technician	\$ 59.37
54151S	Web Content Administrator	\$ 70.55
54151S	Web Content Analyst	\$ 69.28
54151S	Web Designer	\$ 73.38
54151S	Web Marketing Manager	\$ 81.13
54151S	Web Operations Manager	\$ 90.46
54151S	Web Project Manager	\$ 99.53
54151S	Web Security Administrator	\$ 85.99
54151S	Web Security Analyst	\$ 82.39
54151S	Web Software Developer	\$ 82.74
54151S	Web Technical Administrator	\$ 76.38

SIN	MANUFACTURER NAME	MFR PART NO	PRODUCT NAME	UOI	GSA OFFER PRICE (inclusive of the .75% IFF)
518210C	Reality Technology, Inc.	RSCM-SAAdmin-M	RS Compliance Manager - Super Admin	Each	489.67
518210C	Reality Technology, Inc.	RSCM-Admin-M	RS Compliance Manager - Admin	Each	346.85
518210C	Reality Technology, Inc.	RSCM-PUser-M	RS Compliance Manager - Power User	Each	204.03
518210C	Reality Technology, Inc.	RSCM-User-M	RS Compliance Manager - User	Each	40.81
518210C	Reality Technology, Inc.	RSCM-AUser-M	RS Compliance Manager - Assigned User	Each	61.21
518210C	Reality Technology, Inc.	RSCM-UUser-M	RS Compliance Manager - Universal User	Each	322.37

SIN	MANUFACTURER NAME	MFR PART NO	PRODUCT NAME	UOI	GSA OFFER PRICE (inclusive of the .75% IFF)	QUANTITY/VOLUME DISCOUNT
511210	Reality Technology, Inc.	RSCM-SAdmin-A	RS Compliance Manager - Super Admin	Each	5561.71	5% on orders over \$100000
511210	Reality Technology, Inc.	RSCM-Admin-A	RS Compliance Manager - Admin	Each	3939.55	5% on orders over \$100000
511210	Reality Technology, Inc.	RSCM-PUser-A	RS Compliance Manager - Power User	Each	2317.38	5% on orders over \$100000
511210	Reality Technology, Inc.	RSCM-User-A	RS Compliance Manager - User	Each	463.48	5% on orders over \$100000
511210	Reality Technology, Inc.	RSCM-AUser-A	RS Compliance Manager - Assigned User	Each	695.21	5% on orders over \$100000
511210	Reality Technology, Inc.	RSCM-UUser-A	RS Compliance Manager - Universal User	Each	3661.46	5% on orders over \$100000