



GSA 8(a) STARS II

Government Wide Acquisition Contract (GWAC)

Constellation I – Functional Areas 1,2,3,and 4

Ordering Guide

GS-06F-0771Z; 08/31/2011 – 08/30/2021

SMALL DISADVANTAGED BUSINESS (SDB)

FOR MORE INFORMATION

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Rockville, MD 20850
240-645-1000
contracts@etmlc.com
www.etmlc.com

GSA Contacts:

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Small Business GWAC Center
1500 East Bannister Road, Room 1076
Kansas City, MO 64131
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www.gsa.gov/8astars2

TABLE OF CONTENTS

GSA 8(a) STARS II FEATURES	1
HOW TO ORDER FROM THE 8(A) STARS II	3
GUIDANCE ON ORDER PREPARATION	4
WHY ENTERPRICE TECHNOLOGY MANAGEMENT (ETM).....	6
ENTERPRISE TECHNOLOGY MANAGEMENT, LLC (ETM) GSA 8(A) STARS II: CONSTELLATION I.....	7
APPENDIX A: LABOR CATEGORIES FOR ALL FUNCTIONAL AREAS (CONSTELLATION I)	9
APPENDIX B: LABOR CATEGORY DESCRIPTIONS FOR ALL FUNCTIONAL AREAS (CONSTELLATION I).....	13

GSA 8(a) STARS II FEATURES

1. **Ceiling:** \$10 billion
2. **Contract Number:** GS-06F-0771Z
3. **Period of performance:** August 31, 2011 to August 30, 2016; August 31, 2016 to August 30, 2021 (5 Years Option)
4. **Awarded Functional areas:**
 - Functional Area 1 – NAICS 541511 – Custom Computer Programming Services
 - Functional Area 2 – NAICS 541512 – Computer Systems Design Services
 - Functional Area 3 – NAICS 541513 – Computer Facilities Management Services
 - Functional Area 4 – NAICS 541519 – Other Computer Related Services
5. **Enterprise Technology Management, LLC Constellations:** Constellation I
6. **Sole Source:** Directed task orders up to \$4 million each
7. **Contract Access Fee:** Low 0.75 percent applied to the total price/costs
8. **F.O.B. point(s):** Destination
9. **Access to multiple types of task orders:**

Order Types: Authorized order types available under this GWAC are:

 - Fixed-Price Family (FAR 16.2)
 - Time & Materials (FAR 16.6)
 - Labor-Hour (FAR 16.6)
 - Hybrid blends
 - Incentives (FAR 16.4)
10. **Geographical Scope:** Worldwide
11. **GSA STARS II Link:** www.gsa.gov/8astars2
12. **Ordering procedures:** For supplies and services, the ordering procedures, information on blanket purchase agreements (BPAs), and a sample BPA can be found at the GSA Stars II Schedule homepage (www.gsa.gov/8astars2).
13. **Payment address:**

Enterprise Technology Management, LLC (ETM)
1375 Piccard Drive, Suite 270
Rockville, MD 20850
14. **Warranty provision:** Not applicable
15. **Export packing charges:** Not applicable.

16. **Terms and conditions of Government purchase card acceptance:** Government purchase cards will be acceptable for payment.
17. **Terms and conditions of rental maintenance, and repair:** Not applicable.
18. **Terms and conditions of installation:** Not applicable.
19. **Terms and conditions of repair parts:** Not applicable.
20. **Terms and conditions for any other services:** Not applicable.
21. **List of service and distribution points:** Not applicable
22. **List of participating dealers:** Not Applicable
23. **Preventative maintenance:** Not applicable.
24. **Special attributes:** Not Applicable
25. **Section 508:** If applicable, Section 508 compliance information on the supplies and services in this contract are available in Electronic and Information Technology (EIT) at the following:
The EIT standard can be found at: www.Section508.gov.
26. **Data Universal Number System (DUNS) number:** 04-427-0168
27. **System for Award Management:** Enterprise Technology Management, LLC is registered in the System for Award Management database

The OCO should select the Constellation and Functional Area for each order opportunity during acquisition planning. The following table shows the Constellations and FAs.

	FA 1	FA 2	FA 3	FA 4
Constellations I	541511	541512	541513	541519

HOW TO ORDER FROM THE 8(A) STARS II

There are two ways to order from the 8(a) STARS II GWAC: Direct Order or through GSA FTS.

DIRECT ORDER-Delegations of Authority

Federal agencies that wish to conduct their own procurements may use the 8(a) STARS II GWAC through a delegation of authority. Delegations of authority are easy to request. Only two pieces of information are needed to get started:

1. A request via e-mail from an e-mail account having a “.gov” or “.mil” suffix listing the name(s) of the party (ies) for whom authority is being requested; and
2. A copy of the warrant for each contracting officer for whom authority is being requested. The warrant(s) may accompany the e-mail as a scanned attachment, or may be faxed separately

The Small Business GWAC Center will then validate the information received and issue a Memorandum of Agreement, which includes the delegation of authority. Training will be provided to all personnel involved in the acquisition and a written delegation of authority to the covered contracting official will be issued. The contracting officer’s concurrence on the delegation is required. For information on delegations of authority or to request a delegation, please e-mail 8a@gsa.gov or call toll free (877) 327-8732.

GSA FTS-3 Steps

Doing business with GSA, Federal Technology Service (FTS) requires just three documents:

1. A signed interagency Memorandum of Understanding (MOU) or Service Agreement
2. Statement of Work (SOW) – used for technology or telecommunications services projects including the Functional Area under which it falls
3. Funding document which includes the FTS fee for services

Client/customer approval for the items described in SOW based on the price and availability proposed by an industry partner is required.

GSA FTS Client Support Centers:

- Provide direct client interface and support
- Issue and manage delivery and task orders against contracts
- Procure on behalf of federal customers

Information about GSA FTS is available at www.gsa.gov/fts or by calling (703) 306-6000.

GUIDANCE ON ORDER PREPARATION

The ordering official responsible for the RFQ/RFP will provide a description of the requirement, which will include some or all of the following:

- A statement of work
- A desired completion date along with milestones and/or delivery schedule, period of performance
- The authorized order types available under this contract (i.e., any in the Fixed Price family, Time & Materials, Labor Hour)
- Any change from the standard response deadline
- Evaluation factors
- Any special instructions, conditions, notices, performance measures/metrics, etc.
- The applicable Section 508 accessibility standards from 36 CFR 1194

Orders shall contain, to the maximum extent practicable, performance based statements of work with meaningful performance measures/metrics. There is a useful Best Practices Guide issued by the Office of Federal Procurement Policy available on the web at <http://www.acqnet.gov/Library/OFPP/BestPractices/>. Funding for each Order shall be at the Order level, not at the contract level.

Services and supplies will be ordered by:

- Issuance of Written Orders on GSA Form 300, Standard Form 1449 or DD Form 1155 using ITSS or other authorized agency form distributed by mail, fax or e-mail attachment. Oral Orders are not authorized.
- One copy of delegated orders including SOW shall be sent to the address listed below:

GSA, FSS, GWAC Management Center (4FG)
Attn: Angela Joslin
401 West Peachtree Street, Suite 2600
Atlanta, GA 30308

At completion of performance, Federal Acquisition Regulations requires the client agency to complete a past performance questionnaire. An on-line form is available from the 8(a) STARS II website at www.gsa.gov/8astars2.

All options shall be priced and evaluated at the time of initial receipt of offers. Quotes shall contain a line item breakdown. For any disparity of terms and conditions between an order and the actual contract, the terms and conditions of the contract shall prevail. Quotes shall remain valid for a period of not less than 60 calendar days if the minimum acceptance period is not stated in the RFQ/RFP. Although ceiling line item pricing has already been determined fair and reasonable based upon adequate price competition, government contracting officers are required to ensure that order pricing is fair and reasonable for their specific requirements. Hardware, software, and other IT items which fall within the scope of the contract may also be

procured at the order level provided that they are within the scope of the selected Functional Area/NAICS code description. Other Direct Costs (ODCs) are those costs incurred by the contractor (when authorized by an order) to obtain supplies or services including hardware, software, training, subcontractor costs, etc. All ODCs must be itemized to the maximum extent possible on individual orders. Administrative Contracting Officers shall determine price reasonableness for all ODCs proposed under the order. Please refer to Sections B and C of the master contract for additional guidance on ODCs.

WHY ETM

Enterprise Technology Management, LLC (ETM) is a Small Disadvantage Business (SDB) leading Information Technology services firm providing enterprise solutions services to clients in both the Federal and commercial sectors. ETM specializes in building and implementing Enterprise solutions that provide rapid, sustainable value, in the areas of Enterprise Services, Application Development and Systems Integration. ETM was founded based on the beliefs in providing outstanding customer services, highly skilled workforce, quality management and disciplined methodologies.

Enterprise Technology Management, LLC (ETM) GSA 8(A) STARS II Constellation I

FUNCTIONAL AREA 1 / NAICS 541511 - Custom Computer Programming Services:

- Applications Software Programming Services
- Computer Program or Software Development
- Computer Programming Services
- Computer Software Support Services
- Database Design/Generation
- Legacy Interfaces/Data Migration
- Software Analysis and Design
- Software Programming
- Software Testing
- Web Design

FUNCTIONAL AREA 2 / NAICS 541512 - Computer Systems Design Services:

- CAD (computer-aided design) systems integration design services
- CAE (computer-aided engineering) systems integration design
- CAM (computer-aided manufacturing) systems integration design
- Computer hardware consulting services

and/or consultants

- Computer software consulting services or consultants
- Computer systems integration analysis and design services
- Computer systems integration design consulting services
- Computer integrator services
- Information management computer systems integration design services
- Local Area Network (LAN) computer systems integration design services
- Computer network systems design services
- Office automation computer systems integration design services

FUNCTIONAL AREA 3 / NAICS 541513 -

Computer Facilities Management Services:

- Computer Operations/Support
- Computer Systems Facilities Services
- Data Processing Facilities Services
- End User Support
- Equipment Inventory & Maintenance
- Hardware/Software Maintenance
- Help Desk
- IT Facilities Management, Operation, & Support
- IT Facilities Planning
- Network Management
- Computer systems facilities management and operation services
- Data processing facilities management and operation services
- Computer systems or data processing facilities management and operation services
- Computer systems or data process facilities support services

FUNCTIONAL AREA 4 / NAICS 541519 -

Other Computer Related Services:

- Computer disaster recovery services
- Computer software installation services

**APPENDIX A: Labor Categories for All Functional Areas
(Constellation I – NAICS 541511, 541512,
541513, 541519)**

**** Labor hourly rates provided upon request*

1.	Applications Programmer
2.	Applications Systems Analyst/ Programmer – Intermediate
3.	Applications Systems Analyst/ Programmer – Senior
4.	Business Process Consultant
5.	Business Subject Matter Specialist
6.	Business Systems Analyst - Intermediate
7.	Business Systems Analyst - Senior
8.	Business Systems Specialist
9.	Chief Information Security Officer
10.	Client/Server Database Manager
11.	Client/Server Network Architect
12.	Client/Server Support Analyst
13.	Communications Analyst - Intermediate
14.	Communications Analyst - Senior
15.	Communications Facility Engineer
16.	Communications Installer
17.	Communications Transmission Engineer
18.	Computer Operations Manager
19.	Consultant
20.	Data Architect
21.	Data Communications Manager - Planning & Implementation
22.	Data Entry Supervisor
23.	Data Security Administration Manager
24.	Data Security Analyst - Intermediate
25.	Data Security Analyst - Senior
26.	Data Warehousing Administrator
27.	Data Warehousing Analyst
28.	Data Warehousing Programmer
29.	Data Warehousing Project Manager
30.	Data/Configuration Management Specialist
31.	Database Administrator
32.	Database Analyst/ Programmer - Intermediate

33.	Database Analyst/ Programmer – Senior
34.	Database Manager
35.	Disaster Recovery Administrator
36.	Disaster Recovery Analyst
37.	Documentation Specialist - Intermediate
38.	Documentation Specialist - Senior
39.	E-Business Manager
40.	Electronic Data Interchange (EDI) Manager
41.	Electronic Data Interchange (EDI) Specialist
42.	Electronic Mail Coordinator
43.	Engineering Subject Matter Specialist
44.	ERP Business/Architectural Specialist
45.	ERP Business Analyst - Intermediate
46.	ERP Business Analyst - Senior
47.	ERP Programmer
48.	Graphics Specialist
49.	Groupware Specialist
50.	Help Desk Coordinator - Intermediate
51.	Help Desk Coordinator - Senior
52.	Help Desk Manager
53.	Help Desk Specialist
54.	Help Desk Support Services Specialist - Intermediate
55.	Help Desk Support Services Specialist - Senior
56.	Information Assurance Development Engineer
57.	Information Assurance Engineer
58.	Information Assurance Network Specialist
59.	Information Assurance Systems/Network Specialist
60.	Information Center Consultant
61.	Information Center Specialist
62.	Information Security Business Analyst
63.	Information Services Consultant
64.	Information Systems Auditor - Intermediate
65.	Information Systems Auditor - Senior
66.	Information Systems Training Specialist - Intermediate
67.	Information Systems Training Specialist - Senior
68.	Internal Communications Systems Consultant
69.	IT Subject Matter Specialist

70.	LAN Administrator - Intermediate
71.	LAN Administrator - Senior
72.	LAN Support Technician - Intermediate
73.	LAN Support Technician - Senior
74.	LAN/WAN Administrator
75.	LAN/WAN Integrator
76.	LAN/WAN/MAN Administrator
77.	Network Control Technician
78.	Network Engineer - Intermediate
79.	Network Engineer - Senior
80.	Network Operations Supervisor
81.	Network Planning Analyst - Intermediate
82.	Network Planning Analyst - Senior
83.	Network Planning Manager
84.	Network Systems Administrator
85.	Network Systems Manager
87.	Operations Manager - Data Communications
88.	Operations Manager - Voice Communications
89.	Operations Systems Manager
90.	Operations/ Technical Support Manager
91.	Operations/Network LAN Administrator
92.	Operations/Technical Support Analyst
93.	PC Products Analyst
94.	PC Systems Specialist
95.	PC/LAN Mgmt Analyst - Intermediate
96.	PC/LAN Mgmt Analyst – Senior
97.	Project Engineer
98.	Project Manager – Senior
99.	Quality Assurance Analyst - Intermediate
100.	Quality Assurance Analyst - Senior
101.	Quality Assurance Specialist
102.	Security Coordinator
103.	Site Manager
104.	Software Architect
105.	Software Developer – Intermediate
106.	Software Developer – Senior
107.	Software Systems Engineer - Intermediate

108	Software Systems Engineer - Senior
109.	Strategic Planner
110.	Systems Administrator - Intermediate
111	Systems Administrator - Senior
112.	Systems Analysis and Programming Director
113.	Systems Engineer
114.	Systems Management Technologist
115.	Technical Editor
116.	Technical Writer
117.	Telecommunications Analyst/Technician
118.	Telecommunications Engineer/ Analyst – Intermediate
119.	Telecommunications Engineer/ Analyst – Senior
120.	Telecommunications Manager - Multiple Incumbents
121.	Telecommunications Manager - Single Incumbent
122.	Telecommunications Network Help Desk
123.	Telecommunications Programmer/ Systems Analyst – Intermediate
124.	Telecommunications Programmer/ Systems Analyst – Senior
125.	Telecommunications Technician
126.	Telecommunications/Communications Integration Engineer
127.	Test Engineer
128.	UNIX Systems Administrator
129.	Voice Communications Administrator
130.	Voice Communications Manager - Planning & Implementation
131.	Voice Communications Technician
132.	Web Content Administrator
133.	Web Content Analyst
134.	Web Designer
135.	Web Marketing Manager
136.	Web Operations Manager
137.	Web Project Manager
138.	Web Security Administrator
139.	Web Security Analyst
140.	Web Software Developer
141.	Web Technical Administrator

**** Rates provided upon written request**

APPENDIX B: Labor Category Descriptions for All Functional Areas (Constellation I – NAICS 541511, 541512, 541513, 541519)

CLIN 1 – Applications Programmer:

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.

CLIN 2 – Applications Systems Analyst/Programmer - Intermediate:

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.

CLIN 3 – Applications Systems Analyst/Programmer - Senior:

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.

CLIN 4 – Business Process Consultant:

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 as project manager in some cases.

CLIN 5 – Business Subject Matter Specialist:

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 an emphasis on the planning, analysis, testing, integration, documentation, and presentation phases.

CLIN 6 – Business Systems Analyst - Intermediate:

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.

CLIN 7 – Business Systems Analyst - Senior:

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.

CLIN 8 – Business Systems Specialist:

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.

CLIN 9 – Chief Information Security Officer:

Ensures that all information systems are functional and secure.

CLIN 10 – Client/Server Database Manager:

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 database management section.

CLIN 11 - Client/Server Network Architect:

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.

CLIN 12 – Client/Server Support Analyst:

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.

CLIN 13 – Communications Analyst - Intermediate:

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 of experience in telecommunications with particular emphasis in traffic engineering and network design. Frequently reports to Data/Voice Communications Management or Internal Communications Systems Consultant.

CLIN 14 – Communications Analyst - Senior:

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.

CLIN 15 – Communications Facility Engineer:

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.

CLIN 16 – Communications Installer:

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.

CLIN 17 – Communications Transmission Engineer:

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.

CLIN 18 – Computer Operations Manager:

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.

CLIN 19 – Consultant:

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.

CLIN 20 – Data Architect:

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.

CLIN 21 – Data Communications Manager – Planning & Implementation:

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.

CLIN 22 – Data Entry Supervisor:

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.

CLIN 23 – Data Security Administration Manager:

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.

CLIN 24 – Data Security Analyst – Intermediate:

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.

CLIN 25 – Data Security Analyst – Senior:

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.

CLIN 26 – Data Warehousing Administrator:

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 includes data from all functions of the organization using data manipulation, transformation and cleansing tools. Requires three years of experience in the field.

CLIN 27 – Data Warehousing Analyst:

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 of experience in the field.

CLIN 28 – Data Warehousing Programmer:

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 Meta data repository management. Prepares/implements data verification and testing methods for the data warehouse. Creates index and view scripts. Requires two years of experience in the field.

CLIN 29 – Data Warehousing Project Manager:

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.

CLIN 30 – Data/Configuration Management Specialist:

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.

CLIN 31 – Database Administrator:

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.

CLIN 32 – Database Analyst/Programmer - Intermediate:

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.

CLIN 33 – Database Analyst/Programmer - Senior:

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 of experience in the field.

CLIN 34 – Database Manager:

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.

CLIN 35 – Disaster Recovery Administrator:

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.

CLIN 36 – Disaster Recovery Analyst:

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.

CLIN 37 – Documentation Specialist - Intermediate:

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.

CLIN 38 – Documentation Specialist - Senior:

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.

CLIN 39 – E-Business Manager:

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.

CLIN 40 – Electronic Data Interchange (EDI) Manager:

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.

CLIN 41 – Electronic Data Interchange (EDI) Specialist:

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.

CLIN 42 – Electronic Mail Coordinator:

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.

CLIN 43 – Engineering Subject Matter Specialist:

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.

CLIN 44 – ERP Business/Architectural Specialist:

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.

CLIN 45 – ERP Business Analyst - Intermediate:

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.

CLIN 46 – ERP Business Analyst - Senior:

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.

CLIN 47 – ERP Programmer:

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.

CLIN 48 – Graphics Specialist:

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.

CLIN 49 – Groupware Specialist:

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.

CLIN 50 – Help Desk Coordinator - Intermediate:

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.

CLIN 51 – Help Desk Coordinator - Senior:

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.

CLIN 52 – Help Desk Manager:

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 of experience in the field.

CLIN 53 – Help Desk Specialist:

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.

CLIN 54 – Help Desk Support Services Specialist - Intermediate:

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.

CLIN 55 – Help Desk Support Services Specialist - Senior:

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.

CLIN 56 – Information Assurance Development Engineer:

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 solution.

CLIN 57 – Information Assurance Engineer:

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.

CLIN 58 – Information Assurance Network Specialist:

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 cycle.

CLIN 59 - Information Assurance Systems/Network Specialist:

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.

CLIN 60 – Information Center Consultant:

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.

CLIN 61 – Information Center Specialist:

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.

CLIN 62 – Information Security Business Analyst:

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

CLIN 63 – Information Services Consultant:

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.

CLIN 64 – Information Systems Auditor – Intermediate:

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.

CLIN 65 – Information Systems Auditor - Senior:

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.

CLIN 66 – Information Systems Training Specialist - Intermediate:

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.

CLIN 67 – Information Systems Training Specialist - Senior:

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.

CLIN 68 – Internal Communications Systems Consultant:

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.

CLIN 69 – IT Subject Matter Specialist:

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.

CLIN 70 – LAN Administrator - Intermediate:

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.

CLIN 71 – LAN Administrator - Senior:

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.

CLIN 72 – LAN Support Technician - Intermediate:

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.

CLIN 73 – LAN Support Technician - Senior:

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.

CLIN 74 – LAN/WAN Administrator:

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.

CLIN 75 – LAN/WAN Integrator:

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.

CLIN 76 – LAN/WAN/MAN Administrator:

Monitors LAN, WAN, MAN, and servers. Provides batch monitoring, tape backup, 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.

CLIN 77 – Network Control Technician:

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.

CLIN 78 – Network Engineer - Intermediate:

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.

CLIN 79 – Network Engineer - Senior:

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.

CLIN 80 – Network Operations Supervisor:

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.

CLIN 81 – Network Planning Analyst – Intermediate:

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.

CLIN 82 – Network Planning Analyst - Senior:

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.

CLIN 83 – Network Planning Manager:

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.

CLIN 84 – Network Systems Administrator:

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.

CLIN 85 – Network Systems Manager:

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.

CLIN 86 – Network/Hardware Support Technician:

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.

CLIN 87 – Operations Manager - Data Communications:

Manages all aspects of the daily operation for data network(s) in either a standalone 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.

CLIN 88 – Operations Manager - Voice Communications:

Manages all aspects of the daily operation for voice network(s) in either a standalone 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.

CLIN 89 – Operations Systems Manager:

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.

CLIN 90 – Operations/Network LAN Administrator:

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.

CLIN 91 – Operations/Technical Support Analyst:

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.

CLIN 92 – Operations/Technical Support Manager:

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.

CLIN 93 – PC Products Analyst:

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.

CLIN 94 – PC Systems Specialist:

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.

CLIN 95 – PC/LAN Management Analyst - Intermediate:

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.

CLIN 96 – PC/LAN Management Analyst - Senior:

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.

CLIN 97 – Project Engineer:

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.

CLIN 98 – Project Manager – Senior:

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.

CLIN 99 – Quality Assurance Analyst - Intermediate:

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.

CLIN 100 – Quality Assurance Analyst - Senior:

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. Frequently reports to a Quality Assurance Manager.

CLIN 101 – Quality Assurance Specialist:

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.

CLIN 102 – Security Coordinator:

Coordinates, develops, and evaluates security programs for an organization.

CLIN 103 – Site Manager:

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.

CLIN 104 – Software Architect:

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.

CLIN 105 – Software Developer - Intermediate:

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 of experience in the field.

CLIN 106 – Software Developer - Senior:

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 of experience in the field.

CLIN 107 – Software Systems Engineer - Intermediate:

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.

CLIN 108 – Software Systems Engineer –Senior:

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.

CLIN 109 – Strategic Planner:

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.

CLIN 110 – Systems Administrator - Intermediate:

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.

CLIN 111 – Systems Administrator - Senior:

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.

CLIN 112 – Systems Analysis and Programming Director:

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

CLIN 113 – Systems Engineer:

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.

CLIN 114 – Systems Management Technologist:

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.

CLIN 115 – Technical Editor:

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.

CLIN 116 – Technical Writer:

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.

CLIN 117 - Telecommunications Analyst/Technician:

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

CLIN 118 – Telecommunications Engineer/Analyst – Intermediate:

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.

CLIN 119 – Telecommunications Engineer/Analyst - Senior:

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.

CLIN 120 – Telecommunications Manager - Multiple Incumbents:

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.

CLIN 121 – Telecommunications Manager - Single Incumbent:

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.

CLIN 122 – Telecommunications Network Help Desk:

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.

CLIN 123 – Telecommunications Programmer/Systems Analyst - Intermediate:

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.

CLIN 124 – Telecommunications Programmer/Systems Analyst - Senior:

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.

CLIN 125 – Telecommunications Technician:

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.

CLIN 126 – Telecommunications/Communications Integration Engineer:

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.

CLIN 127 - Test Engineer:

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.

CLIN 128 – UNIX Systems Administrator:

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.

CLIN 129 – Voice Communications Administrator:

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.

CLIN 130 – Voice Communications Manager – Planning & Implementation:

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.

CLIN 131 Voice Communications Technician:

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.

CLIN 132 – Web Content Administrator:

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.

CLIN 133 - Web Content Analyst:

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.

CLIN 134 – Web Designer:

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.

CLIN 135 – Web Marketing Manager:

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.

CLIN 136 – Web Operations Manager:

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.

CLIN 137 – Web Project Manager:

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.

CLIN 138 – Web Security Administrator:

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.

CLIN 139 – Web Security Analyst:

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.

CLIN 140 – Web Software Developer:

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.

CLIN 141 – Web Technical Administrator:

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.