Department of the Navy

Civilian Career Path Guide

Career Areas

for
Management of
Technology, Information, and Knowledge

Volume II

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Career Areas

Introduction

By now you should have reviewed Volume I, the Career Path Guide, which provided an overview of the career development process, which includes the Prepare, Assess, Validate and Evaluate phases. Volume I also gave you an overview of the career areas and job roles available to you in your career path. Hopefully you have identified a career area and job role that fits your skills and best matches your long term professional desires.

This volume gives you the detail you need to assess the competencies that may be required in your chosen career area and job role. Competencies are presented in assessment matrices that employees use as worksheets to determine areas for development. Instructions for using these matrices are provided immediately below.

Instructions

Use the assessment matrices provided here in Volume II to perform an assessment of competencies needed to fulfill a target job role (see the Career Foundational Competencies section contained in Volume I for assessment matrices geared toward those competencies). Each matrix is organized by career area. Each career area contains job roles, while each job role has multiple competencies. Select one career area and one job role within that career area to be targeted.

Important Note: While the listed competencies may require varying levels of proficiency, not <u>every</u> competency requires proficiency. Choose only those competencies that are appropriate for your particular situation.

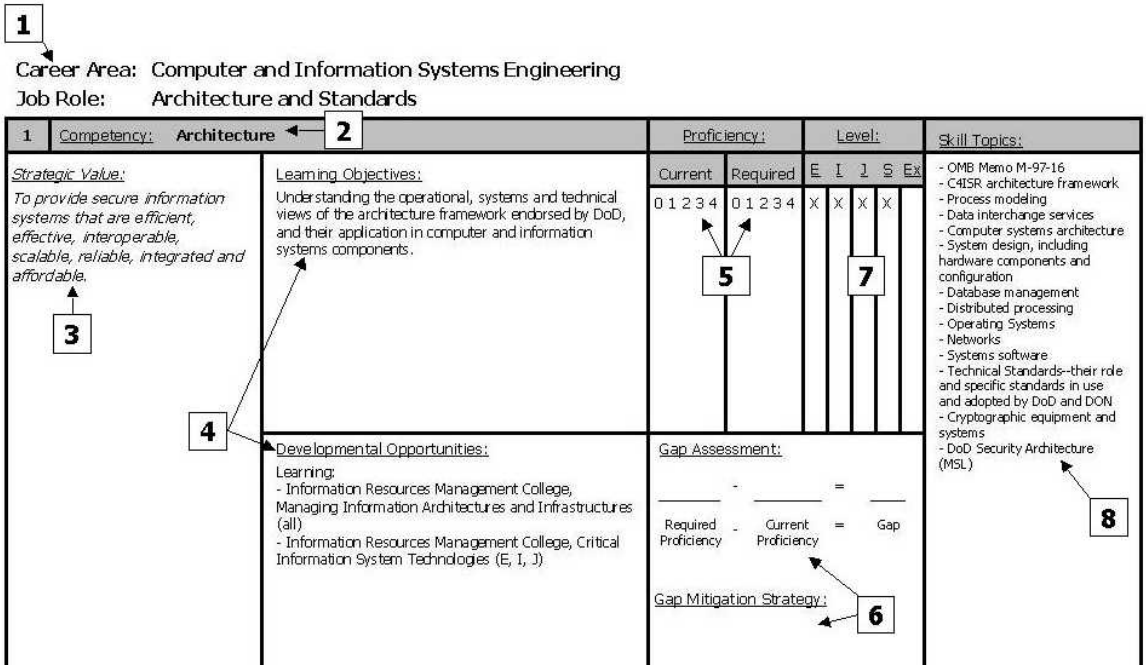
1. Some of the sections on the matrices are for information only. Other sections require collaboration between the employee and manager. Instructions for each matrix section are provided below using the numbered figure on the next page. Keep in mind that these matrices differ slightly from the ones used for career foundational competencies. ***Career Area/Job Role*** contains a reference to which career area and job role the competency pertains.

2. ***Competency*** contains the name of the competency, numbered within the job role.

3. ***Strategic Value*** describes why the competency is important.

4. ***Learning Objectives & Developmental Opportunities*** contain the learning objectives (upper portion) and suggested developmental opportunities (lower portion) that may be useful in satisfying the learning objectives. The developmental opportunities are *suggestions* to pursue **in addition** to those activities to gain proficiency in the ***Skill Topics*** (explained below). This is not an exhaustive list of developmental activities. Employees and managers are encouraged to explore activities that might be useful in a given situation but which may not be listed.

5. ***Current Proficiency & Required Proficiency*** Circle or note the number corresponding to the current and required proficiency (or performance level) for the listed competencies. If no proficiency for a given competency is required (in other words, it is not a competency required by the individual), circle or note a zero (0).



The assessment scale corresponding to the numerical proficiency values are as follows:

0 – No proficiency in competency required
1 – Conceptual knowledge of the competency only, no experience
2 – Ability to apply competency with help
3 – Ability to apply competency autonomously
4 – Ability to help others apply competency; may be acknowledged as an expert

This section also includes a ***Gap Assessment*** section (6) – subtract the current proficiency from the required proficiency and place the resulting number in this section. If the number is positive, there is a deficiency in the competency and a developmental strategy is required -- the larger the number, the greater the deficiency. Next, describe the Gap Mitigation Strategy (the steps to be taken to close the identified gap) in the space provided. It is important to weigh these competencies accurately; therefore, employees and managers need to work together closely to fill out this section.

7. ***Level*** This section suggests the appropriate level where the competency is found. This may be different for a given situation (for example, a headquarters versus field activity). Levels include:

   E – Entry Level
   I – Intermediate Level
   J – Journey Level
   S – Senior Specialist/Supervisor/Managerial Level
   Ex – Executive/SES Level

8. ***Skill Topics*** This lists suggested topics that pertain to the competency. While not all of the skill topics may be relevant to a job role, they provide guidance as to the types of skills found in the competency and thus some of the typical developmental activities that occur as the skills are honed.

Information Management Career Area

Job Roles

The job roles in the Information Management Career Area include the following competencies:

- ***Acquisition Oversight***

  Definition: oversees the acquisition of IM/IT products and services in accordance with the IM/IT architecture and established Federal, DoD and DON acquisition policy and guidance; plans and approves acquisition policy.

  1. Acquisition
  2. Business Development
  3. Life Cycle Management
  4. Acquisition Policy Development and Implementation
  5. Procurement Strategy Planning and Implementation
  6. Capital Planning and Investment
  7. Business Process Reengineering
  8. Systems Integration
  9. Information Technology, Information Management, Knowledge Management
  10. Architecture
  11. Operations Research
  12. Program Management
  13. Contracting Officer's Representative
  14. Information Assurance

- ***Asset Management***

  Definition: uses tools and methods for the management of support functions for inventory, invoicing, and fixed enterprise IM/IT assets. It may also include general ledger, accounts receivable, accounts payable, Enterprise Resource Planning (ERP), and Enterprise Licensing.

  1. Asset Management
  2. Configuration Management
  3. Business Development
  4. Acquisition
  5. Business Process Reengineering
  6. Program Management
  7. Contracting Officer's Representative
  8. Information Assurance

- ***Capital Planning/ Investment***

  Definition: formulates policy and financial plans for the capital and operational costs associated with the IM/IT infrastructure to include the associated appropriations and IT budget as well as the oversight of financial obligations associated with IM/IT infrastructure procurements.

1. Business/Financial Management
2. Cost Estimating and Economic Analysis
3. Acquisition
4. Business Development
5. Policy Development and Implementation
6. Information Technology, Information Management, Knowledge Management
7. Business Process Reengineering
8. Operations Research
9. Program Management
10. Contracting Officer's Representative
11. Information Assurance

❖ *Chief Information Officer*

Definition: has overall responsibility for all aspects of IM/IT in an organization. Roles and responsibilities are generally derived from the Clinger-Cohen Act of 1996. Coordinates closely with the organization's leader and his/her direct reports, in order to align enterprise information resources with the mission.

1. Policy and Organizational
2. Leadership and Managerial
3. Process/Change Management
4. Information Resources Strategy and Planning
5. IT Performance Assessment: Models and Methods
6. Project/Program Management
7. Capital Planning and Investment Assessment
8. Acquisition
9. E-Government/Electronic Business/Electronic Commerce
10. IT Security/Information Assurance
11. Technical
12. Desktop Technology Tools

❖ *Competency Management*

Definition: leverages human capital by strengthening the KM/IM/IT competencies of the enterprise. Oversees development of KM/IM/IT cognitive skills; establishes KM/IM/IT competency guidelines of the non-KM/IM/IT workforce; ensures the recruitment, retention, and training of the KM/IM/IT workforce needed to fulfill core capabilities; and, ensures the IM/IT infrastructure will support Distance Learning/Distributed Learning (DL) while expanding the use of DL technologies.

1. Human Resource Management
2. Competency Definition
3. Organizational Development
4. Distributed Learning Technologies
5. Information Technology, Information Management, Knowledge Management
6. Program Management
7. Contracting Officer's Representative

- ***eBusiness/eGovernment***

  Definition: develops and applies enterprise-wide e-Business and electronic government tools, policy, practices, standards and procedures; interfaces with DoD, Federal, National, and International planning and standards organizations for matters regarding e-Business/e-Government.

  1. Telecommunications Systems Architecture
  2. Internet Technologies
  3. Information Assurance
  4. Business Process Reengineering
  5. Policy Assessment
  6. Integrated Network Management
  7. Standards
  8. Electronic Data Interchange
  9. Systems Integration
  10. Computer Systems Architecture
  11. Software Development
  12. Program Management
  13. Contracting Officer's Representative

- ***Learning***

  Definition: formulates policy and requirements for building KM/IM/IT competencies in the organization's workforce, including KM/IM/IT professionals as well as the rest of the organization. For those areas requiring military expertise and/or current knowledge of military operations, designs and delivers the requisite education and training. Requires knowledge of the technology of learning, including Instructional Systems Design (ISD) and Advanced Distributed Learning (ADL).

  1. Information Technology, Information Management, Knowledge Management
  2. Instructional Systems Design
  3. Distributed Learning Technologies
  4. Learning Policy Assessment
  5. Education & Training Delivery
  6. Program Management
  7. Contracting Officer's Representative

- ***Manpower Planning***

  Definition: defines staffing and competency requirements for the core KM/IM/IT workforce necessary to plan, design, manage, operate, and support the IM/IT infrastructure to include the use of military, civilian, and contractor personnel and related acquisition, competency development, and personnel management considerations.

  1. Information Technology, Information Management, Knowledge Management
  2. Manpower Planning and Requirements Analysis
  3. Human Resource Management
  4. Policy Assessment
  5. Program Management
  6. Contracting Officer's Representative

❖ *Performance Assessment*

Definition: uses tools, methodologies, and procedures to measure or evaluate enterprise IM/IT performance.

1. Network Monitoring
2. Performance Metrics
3. Modeling and Simulation
4. Business Process Reengineering
5. Requirements Analysis
6. Developmental Test & Evaluation
7. Integrated Verification & Validation
8. Operational Test & Evaluation
9. Operations Research
10. Program Management
11. Contracting Officer's Representative
12. Information Assurance

❖ *Process Reengineering and Change Management*

Definition: uses tools, methodologies and procedures to improve the enterprise IM/IT business processes, creating a business environment focused on teamwork and outcomes; improves organizational effectiveness, reengineering and reinventing processes, as well as adopting strategies to anticipate and manage change.

1. Business Process Reengineering
2. Business Development
3. Operations Research
4. Computer Systems Architecture
5. Information Technology, Information Management, Knowledge Management
6. Computer Aided Software Engineering
7. Software Development
8. Policy Development and Implementation
9. Organizational Development
10. Enterprise Resource Planning
11. Program Management
12. Contracting Officer's Representative
13. Information Assurance

❖ *Records Management*

Definition: plans, directs, organizes, trains, promotes, and manages activities with respect to records creation, maintenance and use to include document management.

1. Configuration Management
2. Asset Management
3. Information Technology, Information Management, Knowledge Management
4. Data Maintenance
5. Information Sciences
6. Document Management
7. Program Management
8. Contracting Officer's Representative
9. Information Assurance

❖ *Strategic Planning*

Definition: creates and updates policy and strategic plans governing the use of information resources across the enterprise and the enterprise-wide operational capability to access, process, transport, store, protect and manage this information; establishes the benefits and justifies the planned expenditures in the IM/IT infrastructure and the required management and operational capabilities.

1. Policy/Strategic Plan Development and Implementation
2. Policy Assessment
3. Business Development
4. Business Process Reengineering
5. Business/Financial Management
6. Information Technology, Information Management, Knowledge Management
7. Program Management
8. Contracting Officer's Representative

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	**Acquisition Oversight**	**Asset Management**	**Capital Planning and Investment**	**CIO**	**Competency Management**	**E-Business**	**Learning**	**Manpower Planning**	**Performance Assessment**	**Process Reengineering and Change Management**	**Records Management**	**Strategic Planning**
Acquisition	●	●	●	●								
Acquisition Policy Development and Implementation	●											
Architecture	●											
Asset Management		●									●	
Business Development	●	●	●							●		●
Business Process Reengineering	●	●	●			●			●	●		●
Business/Financial Management			●									●
Capital Planning and Investment Assessment	●			●								
Competency Definition					●							
Computer Aided Software Engineering (CASE)										●		
Computer Systems Architecture						●				●		
Configuration Management		●									●	
Contracting Officers Representative (COR)	●	●	●		●	●	●	●	●	●	●	●
Cost Estimating and Economic Analysis			●									
Data Maintenance											●	
Desktop Technology Tools				●								
Developmental Test & Evaluation (DT&E)									●			
Distributed Learning Technologies					●		●					
Document Management											●	
E-Business						●						
E-Government/Electronic Business/Electronic Commerce				●								
Education & Training Delivery							●					
Enterprise Resource Planning										●		
Human Resource (HR) Management					●			●				
Information Assurance	●	●	●			●			●	●	●	

Competency:	**Acquisition Oversight**	**Asset Management**	**Capital Planning and Investment**	**CIO**	**Competency Management**	**E-Business**	**Learning**	**Manpower Planning**	**Performance Assessment**	**Process Reengineering and Change Management**	**Records Management**	**Strategic Planning**
Information Resources Strategy and Planning				●								
Information Sciences											●	
Information Technology, Information Management, Knowledge Management	●		●		●		●	●		●	●	●
Instructional Systems Design (ISD)							●					
Integrated Network Management						●						
Integrated Verification & Validation (IV&V)									●			
IT Security/Information Assurance				●								
Leadership/Managerial				●								
Learning Policy Assessment							●					
Life Cycle Management	●											
Manpower Planning and Requirements Analysis								●				
Modeling and Simulation									●			
Network Monitoring									●			
Operational Test & Evaluation (OT&E)									●			
Operations Research	●		●						●	●		
Organizational Development					●					●		
Performance Assessment Models and Methods				●								
Performance Metrics									●			
Policy and Organizational				●								
Policy Assessment						●		●				●
Policy Development and Implementation			●							●		
Policy/Strategic Plan Development and Implementation												●
Process/Change Management				●								
Procurement Strategic Planning and Execution	●											
Program Management	●	●	●		●	●	●	●	●	●	●	●
Project/Program Management				●								
Requirements Analysis									●			
Software Development						●				●		

Competency:	**Acquisition Oversight**	**Asset Management**	**Capital Planning and Investment**	**CIO**	**Competency Management**	**E-Business**	**Learning**	**Manpower Planning**	**Performance Assessment**	**Process Reengineering and Change Management**	**Records Management**	**Strategic Planning**
Standards						●						
Systems Integration	●					●						
Technical				●								
Telecommunication System Architecture						●						

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology Group (GS-2200) can be found in Appendix B of Volume I.

	Acquisition Oversight	Asset Management	Capital Planning & Investment	Chief Information Officer	Competency Management	e-Business	Learning	Manpower Planning	Performance Assessment	Process Reengineering & Change Management	Records Management	Strategic Planning
GS-301 Misc. Admin. and Program	●	●	●	●	●	●	●	●	●	●	●	●
GS-335 Computer Clerk & Assistant		●									●	
GS-340 Program Management	●	●	●	●	●			●				●
GS-343 Management & Program Analysis	●	●	●					●	●	●		●
GS-391 Telecommunications	●	●	●	●		●			●			●
GS-392 General Telecommunications		●							●			
GS-854 Computer Engineer				●								
GS-855 Electronics Engineering	●			●								
GS-1410 Librarian											●	
GS-1411 Library Technician											●	
GS-1412 Technical Information Services											●	
GS-1515 Operations Research									●	●		
GS-1550 Computer Science	●			●								
GS-2210 IT Management Specialist[1]	●	●	●	●	●	●	●	●	●	●	●	●

[1] Formerly GS-334 Computer Specialist.

Knowledge Management Career Area

Job Roles

The job roles in the Knowledge Management Career Area include the following competencies:

- ***Chief Knowledge Officer (CKO)***

  Definition: manages the knowledge sharing process at the command level; leads efforts to move the organization to knowledge centricity; requires a dedication to KM principles, the ability to discuss the benefits of knowledge sharing, and the vision to ensure that KM initiatives are adopted by the organization; ensures that the best, relevant information for the area of practice is accessible to all personnel and implements the knowledge sharing strategy in alignment with command guidelines; champions cross-organizational communities of practice, forms relationship with HR, IT, librarian, organizational learning; establishes incentive programs for knowledge sharing and re-use; fosters cultural change; defines roles, skill-set, and opportunities for knowledge workers and facilitates training and education of knowledge workers.

  1. Architecture
  2. Knowledge Base Development
  3. eBusiness/Electronic Data Interchange
  4. Learning Environment Management
  5. Knowledge Sharing/Reuse
  6. Performance Metrics
  7. KM Concept/Strategy
  8. Policy/Strategic Plan Development and Implementation
  9. KM Cultural Transformation
  10. Information Resource Management
  11. Enterprise Resource Planning
  12. KM Ethical and Legal Issues
  13. Business Process Reengineering
  14. Facilitation and Arbitration
  15. Systems Thinking
  16. Leading People
  17. Business Acumen
  18. Building Coalition/Communication
  19. KM Program/Project Management
  20. Knowledge Life Cycle Management
  21. Knowledge Mapping
  22. Knowledge Transfer

- ***Knowledge Manager (KM)***

  Definition: works with the Chief Knowledge Officer to implement KM initiatives; manages KM efforts; looks across KM processes to capture tacit and explicit knowledge and often balances technology, information, processes, and individual and organizational learning within a culture of shared values. Creates ways to maintain a sustainable competitive advantage.

1. Architecture
2. Knowledge Base Development
3. E-Business/Electronic Data Interchange
4. Content Integration
5. Learning Environment Management
6. Knowledge Sharing/Reuse
7. Performance Metrics
8. KM Concept/Strategy
9. Policy/Strategic Plan Development and Implementation
10. KM Cultural Transformation
11. Information Resource Management
12. Enterprise Resource Planning
13. KM Ethical and Legal Issues
14. Business Process Reengineering
15. Facilitation and Arbitration
16. Systems Thinking
17. Communities of Practice
18. KM Program/Project Management
19. Decision Science
20. Leading People
21. Business Acumen
22. Building Coalition/Communication
23. Knowledge Life Cycle Management
24. Knowledge Mapping
25. Knowledge Transfer

❖ ***Knowledge Systems Engineer (KSE)***

Definition: turns KM ideas into workable solutions by engineering appropriate knowledge sharing Internet/intranet sites, rules based systems, portals, databases, etc. Requires intimate knowledge of the systems, architectures, technologies, standards, and protocols for KM. Ensures performance of the KCO is optimized through utilization of KM tools and systems thinking applications.

1. Systems Integration
2. Network Security
3. Architecture
4. Web Development for KM
5. Knowledge Base Development
6. Software Development
7. E-Business/Electronic Data Interchange
8. Content Integration
9. Learning Environment Management
10. Social Network Analysis
11. KM Concept/Strategy
12. Business Process Reengineering
13. Systems Thinking
14. Decision Science
15. Building Coalition/Communication

❖ *Knowledge Process Manager (KPM)*

Definition: focuses on the organization's KM and content integration processes; manages the efforts of the Knowledge Transfer Engineer, Knowledge Research Engineer, and Knowledge Life-Cycle Engineer. Develops process models for optimal organizational effectiveness.

1. Knowledge Transfer
2. Content Integration
3. Knowledge Life Cycle Management
4. Knowledge Mapping
5. Learning Environment Management
6. Knowledge Sharing/Reuse
7. Social Network Analysis
8. KM Concept/Strategy
9. KM Cultural Transformation
10. Systems Thinking
11. KM Program/Project Management

❖ *Knowledge Transfer Engineer (KTE)*

Definition: captures and codifies tacit knowledge, making it available for re-use; connects people to one another to enable the transfer of tacit knowledge to explicit knowledge. This job role is not considered inherently governmental.

1. Knowledge Transfer
2. Content Integration
3. Knowledge Mapping
4. Knowledge Sharing/Reuse
5. Social Network Analysis
6. KM Concept/Strategy
7. KM Cultural Transformation
8. Systems Thinking
9. Communities of Practice

❖ *Knowledge Research Engineer (KRE)*

Definition: creates explicit knowledge from available resources and integrates content in KM systems into easily accessible knowledge for decision makers. While this job offers the opportunity for growth into managerial positions, this job role is not necessarily inherently governmental.

1. Content Integration
2. Knowledge Life Cycle Management
3. Knowledge Mapping
4. Knowledge Sharing/Reuse
5. Social Network Analysis
6. KM Concept/Strategy
7. KM Cultural Transformation
8. Systems Thinking

❖ *Knowledge Life Cycle Engineer (KLE)*

Definition: applies the rules and procedures that ensure the appropriate refresh and currency of information in a knowledge system; determines information birth and death for the KCO.

1. Content Integration
2. Knowledge Life Cycle Management
3. Knowledge Mapping
4. Knowledge Sharing/Reuse
5. Social Network Analysis
6. KM Concept/Strategy
7. KM Cultural Transformation
8. Systems Thinking
9. KM Program/Project Management

❖ *Knowledge Community Leader (KCL)*

Definition: facilitates communities of practice across organizations to foster innovation, improved performance and collaboration; requires facilitation skills to ensure change initiatives are supported.

1. Web Development for KM
2. Knowledge Transfer
3. Content Integration
4. Knowledge Life Cycle Management
5. Knowledge Mapping
6. Learning Environment Management
7. Knowledge Sharing/Reuse
8. Social Network Analysis
9. Performance Metrics
10. KM Concept/Strategy
11. Business Process Reengineering
12. Facilitation and Arbitration
13. Systems Thinking
14. Communities of Practice
15. Leading People
16. Building Coalition/Communication

❖ *Intellectual Capital Manager (ICM)*

Definition: develops the enterprise workforce; ensures the human capital aspects of KM are fully integrated; uses KM to increase the performance of the organization, the learning of the organization and identifies gaps in KM competencies.

1. Learning Environment Management
2. Knowledge Sharing/Reuse
3. KM Concept/Strategy
4. Information Resource Management
5. Enterprise Resource Planning
6. Systems Thinking
7. Leading People
8. Business Acumen

- ***Performance Measurement Engineer (PME)***

  Definition: measures and assesses the KCO model implementation and architecture. Performs analysis, develops a predictive model, shows potential impact of change, and provides implications for validation of KCO model.

  1. Social Network Analysis
  2. Performance Metrics
  3. KM Concept/Strategy
  4. Policy/Strategic Plan Development and Implementation
  5. KM Cultural Transformation
  6. Information Resource Management
  7. Enterprise Resource Planning
  8. Business Process Reengineering
  9. Systems Thinking
  10. Decision Science
  11. Business Acumen

- ***Knowledge Assurance Manager (KAM)***

  Definition: ensures the assimilation of information and knowledge is protected from unauthorized access and/or disclosure.

  1. Systems Integration
  2. Network Security
  3. Architecture
  4. Web Development for KM
  5. E-Business/Electronic Data Interchange
  6. Knowledge Mapping
  7. Social Network Analysis
  8. Performance Metrics
  9. KM Concept/Strategy
  10. KM Cultural Transformation
  11. KM Ethical and Legal Issues
  12. Systems Thinking

- ***Knowledge Assistant (KA)***

  Definition: understands organizational information needs; assists in data gathering activities; uses expert multimedia skills and Web tools to prepare and distribute organizational products/communications; analyzes and improves organizational workflow and communications. This job role is not considered inherently governmental.

  1. Content Integration
  2. KM Concept/Strategy
  3. Systems Thinking
  4. Web Development for KM

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	**Chief Knowledge Officer (CKO)**	**Intellectual Capital Manager (ICM)**	**Knowledge Assurance Manager (KAM)**	**Knowledge Community Leader (KCL)**	**Knowledge Life Cycle Engineer (KLE)**	**Knowledge Manager (KM)**	**Knowledge Process Manager (KPM)**	**Knowledge Research Engineer (KRE)**	**Knowledge Systems Engineer (KSE)**	**Knowledge Transfer Engineer (KTE)**	**Performance Measurement Engineer (PME)**	**Knowledge Assistant (KA)**
Architecture	●		●			●			●			
Building Coalition/Communication	●			●		●			●			
Business Acumen	●	●				●					●	
Business Process Reengineering	●			●		●			●		●	
Cognitive and Decision Science						●			●		●	
Communities of Practice				●	●	●				●		
Content Integration				●	●	●	●	●	●	●		●
Electronic Commerce/Electronic Data Interchange	●		●			●			●			
Enterprise Resource Planning	●	●				●					●	
Facilitation and Arbitration	●			●		●						
Information Resource Management	●	●				●					●	
Information Systems/Network Security			●						●			
KM Concept/Strategy	●	●	●	●	●	●	●	●	●	●	●	●
KM Cultural Transformation	●		●		●	●	●	●		●	●	
KM Ethical and Legal Issues	●		●			●						
KM Program/Project Management	●					●	●					
Knowledge Base Development	●					●			●			
Knowledge Life Cycle Management	●			●	●	●	●	●				
Knowledge Mapping	●		●	●	●	●	●	●		●		
Knowledge Sharing/Reuse	●	●		●	●	●	●	●		●		
Knowledge Transfer	●			●		●	●			●		
Leading People	●	●		●		●						
Learning Environment Management	●	●		●		●	●		●			
Performance Metrics	●		●	●		●					●	
Policy/Strategic Plan Development and Implementation	●					●					●	
Social Network Analysis			●	●	●		●	●	●	●	●	

Competency:	**Chief Knowledge Officer (CKO)**	**Intellectual Capital Manager (ICM)**	**Knowledge Assurance Manager (KAM)**	**Knowledge Community Leader (KCL)**	**Knowledge Life Cycle Engineer (KLE)**	**Knowledge Manager (KM)**	**Knowledge Process Manager (KPM)**	**Knowledge Research Engineer (KRE)**	**Knowledge Systems Engineer (KSE)**	**Knowledge Transfer Engineer (KTE)**	**Performance Measurement Engineer (PME)**	**Knowledge Assistant (KA)**
Software Development									●			
Systems Integration			●						●			
Systems Thinking	●	●	●	●	●	●	●	●	●	●	●	●
Web Development for KM			●	●					●			●

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology Group (GS-2200) can be found in Appendix B of Volume I.

	Chief Knowledge Officer	Knowledge Manager	Knowledge Systems Engineer	Knowledge Process Manager	Knowledge Transfer Engineer	Knowledge Research Engineer	Knowledge Life Cycle Engineer	Knowledge Community Leader	Intellectual Capital Manager	Performance Measurement Engineer	Knowledge Assurance Manager	Knowledge Assistant
GS-301 Misc. Admin. and Program												
GS-303 Misc. Clerk and Assistant												●
GS-335 Computer Clerk & Assistant						●						●
GS-340 Program Management	●	●		●			●	●	●	●		
GS-343 Management & Program Analysis		●		●		●	●	●		●		●
GS-391 Telecommunications	●	●	●	●				●	●	●	●	
GS-392 General Telecommunications						●				●		
GS-854 Computer Engineer			●	●		●		●				
GS-855 Electronics Engineer								●				
GS-1410 Librarian	●	●		●			●	●	●		●	
GS-1411 Library Technician		●	●			●	●			●	●	●
GS-1412 Technical Information Services			●			●				●	●	●

	Chief Knowledge Officer	Knowledge Manager	Knowledge Systems Engineer	Knowledge Process Manager	Knowledge Transfer Engineer	Knowledge Research Engineer	Knowledge Life Cycle Engineer	Knowledge Community Leader	Intellectual Capital Manager	Performance Measurement Engineer	Knowledge Assurance Manager	Knowledge Assistant
GS-1550 Technical Information Services	●		●					●		●	●	
GS-2210[2] IT Management	●	●	●	●	●		●	●	●	●	●	

[2] Formerly GS-334 Computer Specialist.

Job Role Distribution within an Organization

To help in identifying opportunities for employees to advance within the KM career area, the following chart provides an overview of where KM job roles are found at various DON activities. It is intended to be a guide to show where these job roles are most typically encountered, although there may be significant differences at certain locations. Some job roles (for example, the Knowledge Research Engineer, Knowledge Life Cycle Engineer and Knowledge Transfer Engineer) may be combined in smaller organizations.

	Chief Knowledge Officer	Knowledge Manager	Knowledge Systems Engineer	Knowledge Process Manager	Knowledge Transfer Engineer	Knowledge Research Engineer	Knowledge Life Cycle Engineer	Knowledge Community Leader	Intellectual Capital Manager	Performance Measurement Engineer	Knowledge Assurance Manager	Knowledge Assistant
Service/Claimant Headquarters	●	●	●	●	●	●	●	●	●	●	●	●
Field Activity/Command Headquarters		●	●	●				●			●	●

Computer and Information Systems Engineering Career Area

Job Roles

The job roles in the Computer and Information Systems Engineering Career Area include the following competencies:

- ***Architecture & Standards***

  Definition: promotes the development, adoption, specification, certification, and application of information technology architecture and standards.

  1. Architecture
  2. Standards
  3. Human Computer Interface
  4. Configuration Management
  5. Requirements Analysis
  6. Integration and Interoperability Engineering
  7. Common Operating Environment
  8. Systems Integration
  9. Developmental Test and Evaluation
  10. Program Management
  11. Contracting Officer's Representative
  12. Information Assurance

- ***Data Management***

  Definition: develops, organizes, and maintains a data architecture.

  1. Data Maintenance
  2. Electronic Data Interchange
  3. Standards
  4. Configuration Management
  5. Quality Assurance
  6. Requirements Analysis
  7. Common Operating Environment
  8. Computer Systems Architecture
  9. Information Assurance
  10. Modeling and Simulation
  11. Program Management
  12. Contracting Officer's Representative

- ***Project Management***

  Definition: within the Computer and Information Systems Engineering area, supports the acquisition of required hardware, software, support systems, and other materials while ensuring the adherence to Federal Law and DoD and DON life cycle management regulations; provides guidance for system oversight, reviews, and milestone approval for DON-managed information system programs; manages contracts and related supplier management functions; performs Contracting Officer's Representative (COR) functions.

1. Systems Development
2. Systems Acquisition
3. Information Technology, Information Management, Knowledge Management
4. Business Development
5. Quality Assurance
6. Configuration Management
7. Risk Management
8. Architecture
9. Business Process Reengineering
10. E-Business
11. Life Cycle Management
12. Requirements Analysis
13. Requirements Management
14. Program Management
15. Contracting Officer's Representative
16. Information Assurance

❖ *Research & Development*

Definition: conducts basic scientific research and applies research to advanced technologies and prototypes for computer and communications systems.

1. Basic Scientific Research
2. Applied Research
3. Advanced Concept Technology Demonstrations
4. Requirements Analysis
5. Modeling and Simulation
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ *Software Engineering*

Definition: develops, tests, operates, implements, and maintains DON software systems, as well as selects commercial off-the-shelf software; also oversees these functions.

1. Software Development
2. Software Reuse
3. Computer Aided Software Engineering
4. Human Computer Interface
5. Common Operating Environment
6. Computer Systems Architecture
7. Requirements Management
8. Configuration Management
9. Systems Integration
10. Standards
11. Testing
12. Life Cycle Management
13. Program Management
14. Contracting Officer's Representative
15. Information Assurance

- ***System Analysis***

  Definition: identifies, collects and analyzes customer/user requirements; distributes and allocates these requirements to system and subsystem levels.

  1. Requirements Analysis
  2. Modeling and Simulation
  3. Architecture
  4. Human Computer Interface
  5. Operations Research
  6. Configuration Management
  7. Computer Aided Software Engineering
  8. Business Process Reengineering
  9. Program Management
  10. Contracting Officer's Representative
  11. Information Assurance

- ***Systems Engineering***

  Definition: integrates information system components including hardware, software, data, policy, procedures and users to produce a working system; integrates information systems with the external environment while focusing on reusability, interoperability, standards, security, and other factors.

  1. Requirements Analysis
  2. Computer Systems Architecture
  3. Systems Integration
  4. Software Development
  5. Software Reuse
  6. Computer Aided Software Engineering
  7. Human Computer Interface
  8. Common Operating Environment
  9. Network Engineering
  10. Integrated Network Management
  11. Operational Test and Evaluation
  12. Integrated Verification and Validation
  13. Reliability
  14. Configuration Management
  15. Operations Research
  16. Program Management
  17. Contracting Officer's Representative
  18. Information Assurance

- ***Test & Evaluation***

  Definition: conducts all aspects of testing for a system's life cycle, including developmental, operational, and integration testing and evaluation; individuals pursuing this discipline should have working knowledge of the testing and evaluation tools and techniques used to evaluate software and information systems.

  1. Developmental Test and Evaluation
  2. Integrated Verification and Validation
  3. Integration Testing

4. Operational Test and Evaluation
5. Quality Assurance
6. Testing
7. Reliability
8. Computer Aided Software Engineering
9. Program Management
10. Contracting Officer's Representative
11. Information Assurance

❖ ***Systems Administration***

Definition: uses tools and methods to operate, test, maintain and manage computer systems and networks which store, transfer, and manipulate data; integrates mainframe, mid-tier, personal computers, associated networks, and systems software components to provide data processing support, products, and services to customers. *This job role is not considered inherently governmental.*

1. Computer Operations Management
2. Network Management
3. Computer Systems Architecture
4. Operational Test and Evaluation
5. Business Development
6. Information Assurance

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	**Architecture and Standards**	**Data Management**	**Project Management**	**Research and Development**	**Software Engineering**	**Systems Administration**	**Systems Analysis**	**Systems Engineering**	**Test and Evaluation**
Advanced Concept Technology Demonstration				●					
Applied Research				●					
Architecture	●		●				●		
Basic Scientific Research				●					
Business Development			●			●			
Business Process Reengineering			●				●		
Common Operating Environment	●	●			●			●	
Computer Aided Software Engineering (CASE)					●		●	●	●
Computer Operations Management						●			
Computer Systems Architecture		●			●	●		●	
Configuration Management	●	●	●		●		●	●	
Contracting Officers Representative (COR)	●	●	●	●	●		●	●	●
Data Maintenance		●							
Developmental Test & Evaluation (DT&E)	●								●
E-Business		●	●						
Human Computer Interface	●				●		●	●	
Information Assurance	●	●	●	●	●	●	●	●	●
Information Technology, Information Management, Knowledge Management			●						
Integrated Network Management								●	
Integrated Verification & Validation (IV&V)								●	●
Integration & Interoperability Engineering	●								
Integration Testing									●
Life Cycle Management			●		●				
Modeling and Simulation		●		●			●		
Network Engineering								●	
Network Management						●			
Operational Test & Evaluation (OT&E)						●		●	●
Operations Research							●	●	
Program Management	●	●	●	●	●		●	●	●
Quality Assurance			●						●

Competency:	**Architecture and Standards**	**Data Management**	**Project Management**	**Research and Development**	**Software Engineering**	**Systems Administration**	**Systems Analysis**	**Systems Engineering**	**Test and Evaluation**
Reliability								●	●
Requirements Analysis	●	●	●	●			●	●	
Requirements Management			●		●				
Risk Management			●						
Software Development					●			●	
Software Reuse					●			●	
Standards	●	●	●		●				
System Integration	●				●			●	
Systems Acquisition			●						
Systems Development			●						
Testing					●				●

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology specialist (GS-2200) can be found in Appendix B of Volume I.

	Architecture & Standards	Data Management	Project Management	Research & Development	Software Engineering	Systems Analysis	Systems Engineering	Test & Evaluation	* Systems Administration
GS-301 Misc. Admin. and Program		●							
GS-303 Misc. Clerk and Assistant		●							
GS-335 Computer Clerk & Assistant		●							●
GS-340 Program Management	●		●			●			
GS-343 Management & Program Analysis	●		●			●			
GS-391 Telecommunications	●		●	●			●		●
GS-854 Computer Engineer	●		●	●	●		●		
GS-855 Electronics Engineer	●				●		●		
GS-856 Electronics Technician					●				
GS-1550 Computer Science	●			●	●	●	●		
GS-2210[3] IT Management	●	●	●	●	●	●	●	●	●

[3] Formerly GS-334 Computer Specialist.

Information Assurance Career Area

Job Roles

The job roles in the Information Assurance Career Area include the following competencies:

- ***Computer Forensics***

  Definition: coordinates with Federal, state, local and private sector law enforcement and other computer forensic entities to investigate and resolve issues and crimes where information may be tampered with or information security (INFOSEC) compromised; preserves evidence and restores the information infrastructure.

  1. Information Security Regulatory Guidance
  2. Computer Forensics Liaison
  3. Contingency and Disaster Recovery Tools and Techniques
  4. Program Management
  5. Contracting Officer's Representative
  6. Information Assurance

- ***Encryption***

  Definition: protects National assets and resources through the use of encryption tools and techniques; formulates encryption and communications security policies and recommendations; protects communications from exploitation by foreign intelligence services; ensures the security of U.S. cryptographic systems, prevents electronic emissions from various communications equipment, and physically protects communications security equipment.

  1. Encryption Tools and Techniques
  2. Communications Security
  3. Information Systems Security Operations
  4. Encryption/Communications Security Policy
  5. Architecture
  6. Program Management
  7. Contracting Officer's Representative
  8. Information Assurance

- ***Information System/Network Security***

  Definition: develops and applies standards, methods, and tools to ensure application of security considerations throughout the life cycle of DoD information systems; manages incident responses, contingency planning, and reconstitution of the information infrastructure.

  1. Information Systems Security Tools and Techniques
  2. Information Security/Information Assurance Regulatory Guidance
  3. Risk Assessment and Mitigation
  4. Architecture
  5. Information System Security Operations
  6. Program Management

7. Contracting Officer's Representative
8. Information Assurance

❖ *Information System Security Management*

Definition: manages INFOSEC, operations, technical/administrative evaluation, and oversight for the entire system/network life cycle.

1. Information Security/Information Assurance Policy
2. Information Systems Security Tools and Techniques
3. Information System Security Operations
4. Program Management
5. Contracting Officer's Representative
6. Information Assurance

❖ *Policy*

Definition: studies and interprets national level policy (promulgated by Congress, Office of Management and Budget, National Institute for Standards and Technology, General Services Administration, the Director of Central Intelligence, and DoD) and integrates it into DON policies.

1. Information Security/Information Assurance Policy
2. Information System Security Operations
3. Information Systems Security Tools and Techniques
4. AIS Life Cycle Management
5. Risk Assessment and Mitigation
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ *Project Management*

Definition: within the Information Assurance area, supports the acquisition of required hardware, software, support systems, and other materials while ensuring the adherence to Federal Law and DoD and DON life cycle management regulations; provides guidance for system oversight, reviews, and milestone approval for DON-managed information system programs; manages contracts and related supplier management functions; performs COR functions.

1. Systems Development
2. Systems Acquisition
3. Information Resource Management
4. Risk Management
5. Business Development
6. Quality Assurance
7. Configuration Management
8. Program Management
9. Contracting Officer's Representative
10. Information Assurance

❖ *Research & Development*

Definition: conducts basic scientific research and applies research to advanced technologies and prototypes for information assurance-related tools and products.

1. Basic Scientific Research
2. Applied Research
3. Advanced Concept Technology Demonstration
4. Requirements Analysis
5. Modeling and Simulation
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ *Risk Management*

Definition: evaluates information systems to identify residual risks; assesses the risk to information systems and networks from attack and/or intrusion; recommends safeguards and protections to manage and mitigate risks; documents system security plans, policies, and procedures; performs system security accreditation and certification; often acts as Information System Security Officer (ISSO), Network Security Officer (NSO), Designated Approval Authority (DAA), or similar function.

1. Risk Assessment and Mitigation
2. Vulnerability Assessment Tools and Techniques
3. Information Systems Security Certification
4. Information Security/Information Assurance Policy
5. Contingency and Disaster Recovery Tools and Techniques
6. Architecture
7. Network/Systems Security Operations
8. AIS Life Cycle Management
9. Program Management
10. Contracting Officer's Representative
11. Information Assurance

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	**Computer Forensics**	**Encryption**	**Information Assurance Policy**	**Information System Security Management**	**Information System/Network Security**	**Project Management**	**Research and Development**	**Risk Management**
Advanced Concept Technology Demonstration							●	
AIS Life Cycle Management			●					●
Applied Research							●	
Architecture		●			●			●
Basic Research							●	
Business Development						●		
Communications Security		●						
Computer Forensics Liaison	●							
Configuration Management						●		
Contingency and Disaster Recovery Tools and Techniques	●							●
Contracting Officers Representative (COR)	●	●	●	●	●	●	●	●
Encryption Tools and Techniques		●						
Encryption/Communications Security Policy		●						
Information Assurance	●	●	●	●	●	●	●	●
Information Resource Management						●		
Information Security/Information Assurance Policy			●	●				●
Information Security/Information Assurance Regulatory Guidance	●				●			
Information Systems Security Certification								●
Information Systems Security Operations		●	●	●	●			
Information Systems Security Tools and Techniques			●	●	●			
Modeling and Simulation							●	
Network/Systems Security Operations								●
Program Management	●	●	●	●	●	●	●	●
Quality Assurance						●		
Requirements Analysis							●	
Risk Assessment and Mitigation			●		●			●

Competency:	Computer Forensics	Encryption	Information Assurance Policy	Information System Security Management	Information System/Network Security	Project Management	Research and Development	Risk Management
Risk Management						●		
Systems Acquisition						●		
Systems Development						●		
Vulnerability Assessment Tools and Techniques								●

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology specialist (GS-2200) can be found in Appendix B of Volume I.

	Computer Forensics	Encryption	Information Systems/Network Security	Information Systems Security Management	Policy	Project Management	Research & Development	Risk Management
GS-340 Program Management				●	●	●		●
GS-343 Management & Program Analysis				●	●	●		●
GS-391 Telecommunications	●	●	●				●	
GS-392 General Telecommunications	●	●	●					
GS-854 Computer Engineer	●	●	●	●	●	●	●	●
GS-855 Electronics Engineer	●	●	●	●	●	●	●	●
GS-856 Electronics Technician		●						
GS-1550 Computer Science	●	●	●	●	●	●	●	●
GS-2210[4] IT Management	●	●	●	●	●	●	●	●

[4] Formerly GS-334 Computer Specialist.

Telecommunications Career Area

Job Roles

The job roles in the Telecommunications Career Area include the following competencies:

- ***Network Communications***

  Definition: works with the architecture and topology of ashore and afloat, deployed and Joint/Allied/Coalition networks and telecommunications systems, including Local Area Networks (LANs), Wide Area Networks (WANs), associated components, standards and protocols–their interoperation, control and management.

  1. Long Haul Communications
  2. Terrestrial Communications
  3. Telecommunications Systems Architecture
  4. Network Design
  5. Testing Processes and Procedures
  6. Operational Test and Evaluation
  7. Program Management
  8. Contracting Officer's Representative
  9. Information Assurance

- ***Network Communications Engineering***

  Definition: engineers ashore and afloat, deployed and Joint/Allied/Coalition networks and telecommunications systems; includes knowledge of transmissions, broadcasting, switching, control and operation of terrestrial, space, radio frequency (RF) and satellite networks, and telecommunications systems.

  1. Long Haul Communications
  2. Terrestrial Communications
  3. Satellite Communications
  4. Transmission Systems Engineering
  5. Telecommunications Systems Architecture
  6. Network Design
  7. Testing Processes and Procedures
  8. Operational Test and Evaluation
  9. Developmental Test and Evaluation
  10. Integrated Validation and Verification
  11. Program Management
  12. Contracting Officer's Representative
  13. Information Assurance

❖ *Network Management*

Definition: designs networks and telecommunications systems and manages their operation; includes telecommunication system architectures, configuration management, and quality assurance (QA).

1. Network Management
2. Terrestrial Communications
3. Configuration Management
4. Telecommunications Systems Architecture
5. Network Design
6. Quality Assurance
7. Testing Processes and Procedures
8. Operational Test and Evaluation
9. Program Management
10. Contracting Officer's Representative
11. Information Assurance

❖ *Policy*

Definition: develops, administers, and interprets broad communications policies and regulations that establish the DON's position on broad organizational telecommunications issues; considers the total range of existing policies (e.g., privacy and security), procedures, laws, and regulations in relation to national security and organizational program goals and objectives.

1. Policy Development and Implementation
2. Policy Assessment
3. Telecommunications Systems Architecture
4. Program Management
5. Contracting Officer's Representative
6. Information Assurance

❖ *Project Management*

Definition: within the Telecommunications area, manages interrelated programs, contracts, and related supplier management functions; requires information transport and telecommunications technology life-cycle management skills.

1. Asset Management
2. Life Cycle Management
3. Configuration Management
4. Network Design
5. Telecommunications Systems Architecture
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ ***Research & Development***

Definition: conducts basic scientific research and applies research to advanced technologies and prototypes for networks and telecommunications systems.

1. Basic Scientific Research
2. Applied Research
3. Advanced Concept Technology Demonstration
4. Requirements Analysis
5. Modeling and Simulation
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ ***Network Operations***

Definition: uses standardized tools and methods to operate communication networks that provide voice, data, video and imagery services; includes network tech control, Joint/Allied/Coalition operations, and life cycle management; specialists working in this area manage and monitor communication networks and services throughout their entire life cycle, ensure mainframe connectivity, and work with infrastructure and wiring. *This job role is not considered inherently governmental.*

1. Network Operations
2. Encryption Tools and Techniques
3. Data Maintenance
4. Terrestrial Communications
5. Network Administration and Support
6. Telecommunications Systems Architecture
7. Information Assurance

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	**Network Communications**	**Network Communications Engineering**	**Network Management**	**Network Operations**	**Policy**	**Project Management**	**Research and Development**
Advanced Concept Technology Demonstration							●
Applied Research							●
Asset Management						●	
Basic Research							●
Configuration Management			●			●	
Contracting Officers Representative (COR)	●	●	●		●	●	●
Data Maintenance				●			
Developmental Test & Evaluation (DT&E)		●					●
Encryption Tools and Techniques				●			
Information Assurance	●	●	●	●	●	●	●
Integrated Verification & Validation (IV&V)		●					●
Life Cycle Management						●	
Long Haul Communications	●	●					
Modeling and Simulation							●
Network Administration and Support				●			
Network Design	●	●	●			●	
Network Management			●				
Network Operations				●			
Operational Test & Evaluation (OT&E)	●	●	●				
Policy Assessment					●		
Policy Development and Implementation					●		
Program Management	●	●	●		●	●	●
Quality Assurance			●				
Requirements Analysis							●
Satellite Communications		●					
Telecommunication System Architecture	●	●	●	●	●	●	●
Terrestrial Communications	●	●	●	●			

Competency:	**Network Communications**	**Network Communications Engineering**	**Network Management**	**Network Operations**	**Policy**	**Project Management**	**Research and Development**
Testing Processes and Procedures	●	●	●				
Transmission Systems Engineering		●					

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology Group (GS-2200) can be found in Appendix B of Volume I.

	Policy	Project Management	Network Communications	Network Communications Engineering	Network Management	Research & Development	* Network Operations
GS-335 Computer Clerk & Assistant							●
GS-340 Program Management	●	●					
GS-343 Management & Program Analysis	●	●					
GS-391 Telecommunications	●	●	●	●	●	●	●
GS-392 General Telecommunications			●		●		●
GS-854 Computer Engineer				●			
GS-855 Electronics Engineer				●			
GS-856 Electronics Technician				●			
GS-2210[5] IT Management	●	●	●	●	●	●	●

[5] Formerly GS-334 Computer Specialist.