CAREER PATHWAY SYSTEM TESTING AND EVALUATION SPECIALIST (671)

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1 671-SYSTEM TESTING AND EVALUATION SPECIALIST

1.1 WORK ROLE OVERVIEW

The table below provides an overview of various role-specific elements related to 671-System Testing and Evaluation Specialist.

Table 1. 671-System Testing and Evaluation Specialist Work Role Overview

NICE Role Description	Plans, prepares, and executes tests of systems to evaluate results against specifications and requirements as well as analyze/report test results.
OPM Occupational Series	Personnel performing the 671-System Testing and Evaluation Specialist work role are most commonly aligned to the following Occupational Series (Top 5 shown): - 2210 - Information Technology – 44% - 801 - General Engineering – 13% - 1550 - Computer Science – 12% - 855 - Electronics Engineering – 8% - 854- Computer Engineering- 3%
Work Role Pairings	Personnel performing the 671-System Testing and Evaluation Specialist work role are most commonly paired with the following complimentary Work Roles (Top 5 shown): - 451 – System Administrator – 18% - 441 – Network Operations Specialist – 13% - 641 – Systems Requirements Planner – 11% - 621 – Software Developer – 8% - 411 – Technical Support Specialist – 7%
Functional Titles	Personnel performing the 671-System Testing and Evaluation Specialist work role may unofficially or alternatively be called: - Acceptance Tester - Application Security Analyst / Engineer - Blue Team Technician - Quality Assurance (QA) Tester - Release Engineer - Security Test Engineer - Software Quality Assurance (QA) Specialist / Engineer - Software Quality Engineer - System Evaluator - Testing and Evaluation Specialist

Distribution of GS-Levels	Personnel performing the 671-System Testing and Evaluation Specialist work role are most commonly found within the following grades on the General Schedule. ** - ☐ GS-4– redacted** - ☐ GS-5 – redacted** - ☐ GS-6 – redacted** - ☐ GS-7 – redacted** - ☐ GS-9 – redacted** - ☐ GS-10 – redacted** - ☒ GS-11 – 5% - ☒ GS-12 – 19% - ☒ GS-13 – 25% - ☒ GS-14 – 10% - ☐ GS-15 – redacted** *38% of all 671s are in non-GS pay plans and excluded from this section *Percentages less than 3% have been redacted
On Ramps	The following work roles are examples of possible roles an individual may perform prior to transitioning into the 671-System Testing and Evaluation Specialist work role: - 411-Technical Support Specialist - 441-Network Operations Specialist - 451-System Administrator - 621-Software Developer - 622-Secure Software Assessor - 632-Systems Developer - 641-Systems Requirements Planner - 661-Research and Development Specialist
Off Ramps	The following work roles are examples of common transitions an individual may pursue after having performed the 671-System Testing and Evaluation Specialist. This is not an exhaustive list, nor does it consider learning and development opportunities an individual may pursue to prepare themselves for performing alternate work roles: - 461-Systems Security Analyst - 521-Cyber Defense Infrastructure Support Specialist - 541-Vulnerability Assessment Analyst - 612-Security Control Assessor - 622-Secure Software Assessor - 632-Systems Developer - 661-Research and Development Specialist

	- 722-Information Systems Security Manager *Note: Leveraging the knowledge, skills, abilities, and tasks of the 671-System Testing and Evaluation Specialist work role, individuals may prepare themselves to transition into one or more of the following cross-functional work roles: - *711- Cyber Instructional Curriculum Developer* - *712-Cyber Instructor* - *732-Privacy Compliance Manager / Officer* - *751-Cyber Workforce Developer and Manager* - *752-Cyber Policy and Strategy Planner* - *802-IT Project Manager* - *803-Product Support Manager*

1.2 CORE TASKS

The table below provides a list of tasks that represent the Core, or baseline, expectations for performance in the 671-System Testing and Evaluation Specialist work role, as well as additional tasks that those in this role may be expected to perform.

Table 2. 671-System Testing and Evaluation Specialist Core Tasks

Task ID	Task Description	Core or Additional
T0426	Analyze the results of software, hardware, or interoperability testing.	Core
T0274	Create auditable evidence of security measures.	Core
T0058	Determine level of assurance of developed capabilities based on test results.	Core
T0257	Determine scope, infrastructure, resources, and data sample size to ensure system requirements are adequately demonstrated.	Core
T0080	Develop test plans to address specifications and requirements.	Core
T0143	Make recommendations based on test results.	Core
T0511	Perform developmental testing on systems under development.	Core
T0512	Perform interoperability testing on systems exchanging electronic information with other systems.	Core
T0513	Perform operational testing.	Core
T0540	Record and manage test data.	Core
T0539	Test, evaluate, and verify hardware and/or software to determine compliance with defined specifications and requirements.	Core
T0393	Validate specifications and requirements for testability.	Core
T0125	Install and maintain network infrastructure device operating system software (e.g., IOS, firmware).	Additional

1.3 CORE KNOWLEDGE, SKILLS, AND ABILITIES

The table below provides a ranking of KSAs that represent the Core, or baseline, expectations for performance in the 671-System Testing and Evaluation Specialist work role, as well as additional KSAs that those in this role may be expected to demonstrate.

Table 3. 671-System Testing and Evaluation Specialist Core KSAs

KSA ID	Description	Competency	Importance to Work Role
K0004	Knowledge of cybersecurity principles.	Information Systems/Network Security	Foundational to all work roles
K0001	Knowledge of computer networking concepts and protocols, and network security methodologies.	Infrastructure Design	Foundational to all work roles
K0003	Knowledge of national and international laws, regulations, policies, and ethics as they relate to cybersecurity.	Legal, Government, and Jurisprudence	Foundational to all work roles
K0002	Knowledge of risk management processes (e.g., methods for assessing and mitigating risk).	Risk Management	Foundational to all work roles
K0005	Knowledge of cyber threats and vulnerabilities.	Vulnerabilities Assessment	Foundational to all work roles
K0006	Knowledge of specific operational impacts of cybersecurity lapses.	Vulnerabilities Assessment	Foundational to all work roles
K0037	Knowledge of Security Assessment and Authorization process.	Information Assurance	Core
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving	Core
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation	Core
S0015	Skill in conducting test events.	Systems Testing and Evaluation	Core
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation	Core
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation	Core
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation	Core
S0048	Skill in systems integration testing.	Systems Testing and Evaluation	Core
S0061	Skill in writing test plans.	Systems Testing and Evaluation	Core
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation	Core
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation	Core

KSA ID	Description	Competency	Importance to Work Role
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation	Core
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation	Core
S0112	Skill in managing test assets, test resources, and test personnel to ensure effective completion of test events.	Systems Testing and Evaluation	Core
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation	Core
S0117	Skill in providing Test & Evaluation resource estimate.	Systems Testing and Evaluation	Core
A0026	Ability to analyze test data.	Systems Testing and Evaluation	Core
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation	Core
K0250	Knowledge of Test & Evaluation processes for learners.	Teaching Others	Core
S0060	Skill in writing code in a currently supported programming language (e.g., Java, C++).	Computer Languages	Additional
K0139	Knowledge of interpreted and compiled computer languages.	Computer Languages	Additional
K0126	Knowledge of Supply Chain Risk Management Practices (NIST SP 800-161)	Contracting/Procurement	Additional
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection	Additional
K0261	Knowledge of Payment Card Industry (PCI) data security standards.	Data Privacy and Protection	Additional
K0262	Knowledge of Personal Health Information (PHI) data security standards.	Data Privacy and Protection	Additional
K0199	Knowledge of security architecture concepts and enterprise architecture reference models (e.g., Zachman, Federal Enterprise Architecture [FEA]).	Enterprise Architecture	Additional
S0367	Skill to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance	Additional
A0123	Ability to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance	Additional
K0027	Knowledge of organization's enterprise information security architecture.	Information Assurance	Additional

KSA ID	Description	Competency	Importance to Work Role
K0044	Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance	Additional
K0203	Knowledge of security models (e.g., Bell-LaPadula model, Biba integrity model, Clark-Wilson integrity model).	Information Assurance	Additional
K0287	Knowledge of an organization's information classification program and procedures for information compromise.	Information Management	Additional
K0179	Knowledge of network security architecture concepts including topology, protocols, components, and principles (e.g., application of defense-in-depth).	Information Systems/Network Security	Additional
K0057	Knowledge of network hardware devices and functions.	Infrastructure Design	Additional
K0170	Knowledge of critical infrastructure systems with information communication technology that were designed without system security considerations.	Infrastructure Design	Additional
K0332	Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services.	Infrastructure Design	Additional
K0169	Knowledge of information technology (IT) supply chain security and supply chain risk management policies, requirements, and procedures.	Risk Management	Additional
K0088	Knowledge of systems administration concepts.	System Administration	Additional
K0102	Knowledge of the systems engineering process.	Systems Integration	Additional
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation	Additional
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness	Additional

1.4 CORE COMPETENCIES

The table below is a compilation of competencies aligned to the 671-System Testing and Evaluation Specialist work role, and their associated importance. Listed competencies are collections of three or more similar Knowledge, Skills, or Abilities aligned to the Work Role. *These competencies originate from the [NICE Framework Competency Pivot Tool](#).*

Table 4. 671-System Testing and Evaluation Specialist Core Competencies

Technical Competency	Comp. ID	Definition	Work Role Related KSAs	Importance
Systems Testing and Evaluation	C050	This area contains KSAs that relate to the principles, methods, and tools for analyzing and administering systems test and evaluation procedures, as well as technical characteristics of IT systems, including identifying critical operational issues.	• Knowledge of organization's evaluation and validation requirements. (K0028) • Knowledge of systems testing and evaluation methods. (K0091) • Skill in conducting test events. (S0015) • Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data). (S0021) • Skill in determining an appropriate level of test rigor for a given system. (S0026) • Skill in developing operations-based testing scenarios. (S0030) • Skill in systems integration testing. (S0048) • Skill in writing test plans. (S0061) • Skill in evaluating test plans for applicability and completeness. (S0082) • Skill in conducting Test Readiness Reviews. (S0104) • Skill in designing and documenting overall program Test & Evaluation strategies. (S0107) • Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements. (S0110) • Skill in managing test assets, test resources, and test personnel to ensure effective completion of test events. (S0112) • Skill in preparing Test & Evaluation reports. (S0115) • Skill in providing Test & Evaluation resource estimate. (S0117) • Ability to analyze test data. (A0026) • Ability to collect, verify, and validate test data. (A0030)	Core

Technical Competency	Comp. ID	Definition	Work Role Related KSAs	Importance
Information Assurance	C022	This area contains KSAs that relate to the methods and procedures that protect information systems and data by ensuring their availability, authentication, confidentiality, and integrity.	• Knowledge of organization's enterprise information security architecture. (K0027) • Knowledge of Security Assessment and Authorization process. (K0037) • Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation). (K0044) • Knowledge of security models (e.g., Bell-LaPadula model, Biba integrity model, Clark-Wilson integrity model). (K0203) • Skill to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation). (S0367) • Ability to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation). (A0123)	Additional
Infrastructure Design	C026	This area contains KSAs that relate to the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunications systems, their components and associated protocols and standards, and how they operate and integrate with one another and with associated controlling software.	• Knowledge of computer networking concepts and protocols, and network security methodologies. (K0001) • Knowledge of network hardware devices and functions. (K0057) • Knowledge of critical infrastructure systems with information communication technology that were designed without system security considerations. (K0170) • Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services. (K0332)	Additional

Technical Competency	Comp. ID	Definition	Work Role Related KSAs	Importance
Data Privacy and Protection	C014	This area contains KSAs that relate to the relationship between the collection and dissemination of data, technology, the public expectation of privacy, legal and political issues surrounding them	• Knowledge of Personally Identifiable Information (PII) data security standards. (K0260) • Knowledge of Payment Card Industry (PCI) data security standards. (K0261) • Knowledge of Personal Health Information (PHI) data security standards. (K0262)	Additional

1.5 SUGGESTED QUALIFICATIONS / CAPABILITY INDICATORS

Table 5. 671-System Testing and Evaluation Specialist Suggested Qualifications / Capability Indicators

For indicators of capability for the 671-System Testing and Evaluation Specialist work role, please see Draft NISTR 8193 - National Initiative for Cybersecurity Education (NICE) Framework Work Role Capability Indicators.

Section to be populated with updated DoD-8140 Qualification Matrix for 671-System Testing and Evaluation Specialist.

2 APPENDIX: 671-SYSTEM TESTING AND EVALUATION SPECIALIST TASK ANALYSIS AND KSA MAPPING

2.1 KEY TO READING THE TASK ANALYSIS AND KSA MAPPING

Table 6. Key to Reading the Task Analysis and KSA Mapping

Proficiency	Task Statement	Importance
As Written	Task as written within the NICE Cybersecurity Workforce Framework (NICE Framework).	Overall Importance to Work Role
Entry	*Example behavioral indicator / task permutation for performing this task at an Entry skills proficiency level.*	
Intermediate	*Example behavioral indicator / task permutation for performing this task at an Intermediate skills proficiency level.*	
Advanced	*Example behavioral indicator / task permutation for performing this task at an Advanced skills proficiency level.*	

Table 7. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
ID of K, S, or A	Knowledge, Skill or Ability needed to perform the task as written within the NICE Framework	Competency mapped to the individual K, S, or A.

2.2 671-SYSTEM TESTING AND EVALUATION SPECIALIST TASK ANALYSIS AND KSA MAPPING

Table 8. T0058 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Determine level of assurance of developed capabilities based on test results.	Core
Entry	*Perform a segment or aspect of the overall testing process; make suggestions on level of assurance based on examination of test results.*	
Intermediate	*Develop and determine level of assurance of developed capabilities based on test results.*	
Advanced	*Review test results and make determination for system/enterprise-wide solutions to be implemented.*	

Table 9. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation
S0112	Skill in managing test assets, test resources, and test personnel to ensure effective completion of test events.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation

KSA ID	Description	Competency
S0117	Skill in providing Test & Evaluation resource estimate.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation

Table 10. T0080 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Develop test plans to address specifications and requirements.	Core
Entry	*Develop test plans to address specifications and requirements.*	
Intermediate	*Review and validate plan; assess risks and dependencies; implement test plans to address specifications and requirements.*	
Advanced	*Approve plan and authorize/oversee execution of test plans; review/approve POA&M requirements.*	

Table 11. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation
S0112	Skill in managing test assets, test resources, and test personnel to ensure effective completion of test events.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation

KSA ID	Description	Competency
S0117	Skill in providing Test & Evaluation resource estimate.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0250	Knowledge of Test & Evaluation processes for learners.	Teaching Others

Table 12. T0143 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Make recommendations based on test results.	Core
Entry	*Make suggestions and recommendations based on test results.*	
Intermediate	*Review test results and give feedback on recommendations; analyze more complex data sets and multiple testing, results, projects concurrently*	
Advanced	*Oversight of all testing and evaluation activities; ensure adherence to test standards and requirements; implementation of recommendations on schedule*	

Table 13. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
A0123	Ability to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0102	Knowledge of the systems engineering process.	Systems Integration
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation

Table 14. T0257 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Determine scope, infrastructure, resources, and data sample size to ensure system requirements are adequately demonstrated.	Core
Entry	*Assist in determining aspects of the scope, infrastructure, resources, and data sample size, providing suggestions and input to ensure system requirements are adequately demonstrated.*	
Intermediate	*Determine scope, infrastructure, resources, and data sample size to ensure system requirements are adequately demonstrated.*	
Advanced	*Accepts and approves, or provides feedback on requirements to include the scope, infrastructure, and data sample size to ensure requirements are adequately demonstrated; assigns/coordinates resources requirements.*	

Table 15. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0027	Knowledge of organization's enterprise information security architecture.	Information Assurance
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation
S0112	Skill in managing test assets, test resources, and test personnel to ensure effective completion of test events.	Systems Testing and Evaluation
S0117	Skill in providing Test & Evaluation resource estimate.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation

Table 16. T0274 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Create auditable evidence of security measures.	Core
Entry	*Scan and generate data/findings; provide data and elements of the audit requirements for evidence of security measures.*	
Intermediate	*Create auditable evidence of security measures; ensure adherence to chain of custody requirements.*	
Advanced	*Advise and approve the security measures and audit package; submit audit results.*	

Table 17. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection
K0027	Knowledge of organization's enterprise information security architecture.	Information Assurance
K0037	Knowledge of Security Assessment and Authorization process.	Information Assurance
K0044	Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
S0367	Skill to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0123	Ability to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 18. T0393 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Validate specifications and requirements for testability.	Core
Entry	*Assist in development of and adherence to specifications and requirements for testability.*	
Intermediate	*Develop and adhere to specifications and requirements for testability.*	
Advanced	*Validate specifications and requirements for testability.*	

Table 19. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 20. T0426 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Analyze the results of software, hardware, or interoperability testing.	Core
Entry	*Assist with and/or analyze aspects of the results of software, hardware, or interoperability testing under guidance and direction.*	
Intermediate	*Analyze the results of software, hardware, or interoperability testing.*	
Advanced	*Review, validate, and accept results of software, hardware, or interoperability testing.*	

Table 21. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0044	Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0123	Ability to apply cybersecurity and privacy principles to organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
K0057	Knowledge of network hardware devices and functions.	Infrastructure Design
K0332	Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services.	Infrastructure Design
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation

KSA ID	Description	Competency
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 22. T0511 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Perform developmental testing on systems under development.	Core
Entry	*Under guidance and supervision, assist with testing/benchmark activities on systems under development; perform preliminary assessment or pre-audit of systems under development.*	
Intermediate	*Perform developmental testing on systems under development.*	
Advanced	*Oversee the developmental testing process, methodology, and test results.*	

Table 23. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0037	Knowledge of Security Assessment and Authorization process.	Information Assurance
K0044	Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0102	Knowledge of the systems engineering process.	Systems Integration
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation

KSA ID	Description	Competency
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 24. T0512 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Perform interoperability testing on systems exchanging electronic information with other systems.	Core
Entry	*Assist with evaluating requirements, setup, and interoperability testing on systems.*	
Intermediate	*Perform interoperability testing on systems exchanging electronic information with other systems.*	
Advanced	*Provide oversight of interoperability testing; validate and approve project documentation; sign off on test artifacts.*	

Table 25. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0027	Knowledge of organization's enterprise information security architecture.	Information Assurance
K0037	Knowledge of Security Assessment and Authorization process.	Information Assurance
K0057	Knowledge of network hardware devices and functions.	Infrastructure Design
K0170	Knowledge of critical infrastructure systems with information communication technology that were designed without system security considerations.	Infrastructure Design
K0332	Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services.	Infrastructure Design
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0169	Knowledge of information technology (IT) supply chain security and supply chain risk management policies, requirements, and procedures.	Risk Management
K0088	Knowledge of systems administration concepts.	System Administration
K0102	Knowledge of the systems engineering process.	Systems Integration
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0048	Skill in systems integration testing.	Systems Testing and Evaluation

KSA ID	Description	Competency
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0110	Skill in identifying Test & Evaluation infrastructure (people, ranges, tools, instrumentation) requirements.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 26. T0513 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Perform operational testing.	Core
Entry	*Set up and perform operational testing.*	
Intermediate	*Develop a test plan and perform operational testing; track and manage test results.*	
Advanced	*Establish the scope of work; provide oversight; assign resources; approve test plan.*	

Table 27. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection
K0044	Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).	Information Assurance
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0102	Knowledge of the systems engineering process.	Systems Integration
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0026	Skill in determining an appropriate level of test rigor for a given system.	Systems Testing and Evaluation
S0030	Skill in developing operations-based testing scenarios.	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 28. T0539 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Test, evaluate, and verify hardware and/or software to determine compliance with defined specifications and requirements.	Core
Entry	*Test, evaluate, and verify a singular hardware and/or software to determine compliance with defined specifications and requirements.*	
Intermediate	*Provide tracking and oversight of multiple systems under evaluation to determine compliance with defined specifications and requirements.*	
Advanced	*Oversee customer/stakeholder engagement capture compliance specifications/requirements; manage project closeout compliance activities with customers/stakeholders.*	

Table 29. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection
K0057	Knowledge of network hardware devices and functions.	Infrastructure Design
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0061	Skill in writing test plans.	Systems Testing and Evaluation
S0082	Skill in evaluating test plans for applicability and completeness.	Systems Testing and Evaluation
S0104	Skill in conducting Test Readiness Reviews.	Systems Testing and Evaluation
S0107	Skill in designing and documenting overall program Test & Evaluation strategies.	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation
K0212	Knowledge of cybersecurity-enabled software products.	Technology Awareness

Table 30. T0540 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Record and manage test data.	Core
Entry	*Analyze and record test data.*	
Intermediate	*Identify and manage test data.*	
Advanced	*Oversee compliance of records and management of test data.*	

Table 31. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
A0040	Ability to translate data and test results into evaluative conclusions.	Problem Solving
K0028	Knowledge of organization's evaluation and validation requirements.	Systems Testing and Evaluation
K0091	Knowledge of systems testing and evaluation methods.	Systems Testing and Evaluation
S0015	Skill in conducting test events.	Systems Testing and Evaluation
S0021	Skill in designing a data analysis structure (i.e., the types of data a test must generate and how to analyze that data).	Systems Testing and Evaluation
S0115	Skill in preparing Test & Evaluation reports.	Systems Testing and Evaluation
A0026	Ability to analyze test data.	Systems Testing and Evaluation
A0030	Ability to collect, verify, and validate test data.	Systems Testing and Evaluation