

FY 2021 DoD T&E Workforce Competency Model

Units of Competence	Competencies	Competency Elements
Planning	Competency 1. Risk Identification	Element 1. Identify T&E risk factors (e.g., lack of available time, money, test articles/platforms, new technology, test expertise, subject matter experts, test facilities, test methodologies/schemes, product maturity that includes hardware/software) based upon likelihood and consequence of occurrence to test strategy/approach and impact on the overall program plan and schedule through participation in all program risk management processes.
		Element 2. Develop risk mitigation recommendations for T&E risk factors in accordance with the processes and procedures found in the Department of Defense Risk, Issue and Opportunity Management Guide to cover system risk elements throughout the acquisition cycle and during the test program.
		Element 3. Support Program Management Office's development of a risk management plan with T&E relevant risks and mitigation plans that enable a balanced plan for a program.
	Competency 2. Capabilities Assessment	Element 4. Translate requirements documents (e.g., Technology Development Strategy, Initial Capabilities Document, Capability Development Document, Program Protection Plan, Systems Engineering Plan (SEP), Cybersecurity Strategy, Information Support Plan, Engineering Plan, Validated Online Lifecycle Threat (VOLT) Report, Environmental Safety, and Occupational Health, and concept of employment/operation) to identify evaluation criteria to support T&E planning efforts.
		Element 5. Determine whether the capability requirements are defined sufficiently to assess testability and are relevant to the operational mission. Understand how flexible requirements in agile developments could affect test and evaluation.
		Element 6. Determine data requirements to assess evaluation criteria for assessing the system performance requirements, (e.g., identify Critical Technical Parameters, software maturity levels, Measures of Effectiveness, Measures of Suitability, Technical Baseline Performance Measures) to support evaluation of Critical Operational Issues, Key Performance Parameters, and Key System Attributes.
		Element 7. Determine necessary T&E infrastructure requirements (people/knowledge, cybersecurity teams, funding, investments, budgets, T&E processes, facilities/ranges, cyber ranges, instrumentation and associated support, automated testing tools, Software Systems Integration Labs, Modeling and Simulation) and identify shortfalls that will require investments to meet T&E infrastructure sufficiency. Determine if and how the Digital Engineering Ecosystem is being used for the program.
	Competency 3. Program T&E Strategy Development	Element 8. Apply all T&E policies, practices and procedures to develop a T&E strategy that supports the program's acquisition strategy for the applicable Adaptive Acquisition Pathway. Incorporate integrated testing (IT) at the earliest opportunity and identify how the following components fit together during systems development: CT, IT, DT, OT, and

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		LFT. For T&E aspects, identify where interoperability, cybersecurity, Scientific Test and Analysis Techniques (STAT), environmental mitigation, safety, and mission-level testing, etc., fit into system development. Determine the appropriate criteria for evaluating OT parameters (Effectiveness, Suitability, and Survivability) and LFT&E parameters (Lethality and Vulnerability).
		Element 9. Document the T&E strategy that integrates policy, program requirements, cost and resource estimates, evaluation framework, and the T&E schedule to accomplish program goals. Use appropriate contracting strategies to maximize the efficient use of human capital and other resources.
		Element 10. Identify all organizations and activities that have roles and responsibilities in providing for or overseeing the T&E strategy that supports a program's acquisition life cycle or a system-of-systems' acquisition life cycle.
		Element 11. Identify and organize the T&E management forum (e.g., T&E Working-level Integrated Product Team, Integrated Test Team, Combined Test Team) necessary to address all the T&E issues and documentation to support the T&E strategy, approach, and overall program plan.
Preparation	Competency 4. Test Cost Estimating	Element 12. Translate the T&E strategy into the appropriate test planning documentation (e.g., Test and Evaluation Master Plan (TEMP) or other test strategy documentation, Developmental Test Plans, Operational Test Plans, and Live-Fire Test Plans) including identification of all the required resources to ensure the strategy is executable and supports the Systems Engineering Plan and overall Acquisition Strategy.
	Competency 5. Coordination of T&E Activities and Events	Element 13. Provide financial cost estimates for T&E support to ensure resources are available and mapped against the schedule to ensure availability during development and production of the system life cycle. Ensure all test costs are fully captured in budget requests and TEMP resource tables, or other test strategy documentation.
	Competency 6. Test Readiness	Element 14. Interact with all organizations/activities that require information/activity exchange to successfully complete the test planning as enumerated in the T&E strategy contained in the TEMP or other test strategy documentation. Element 15. Continually coordinate and monitor availability of required test and/or evaluation resources to identify any potential resource problem/issue (e.g., troop deployment, range closure, required test configurations may slip, environmental certifications, requisite authorities to test/operate, blue team/red team availability) to ensure effective completion of test events. Element 16. Execute tasking orders and funding streams to commit resources as requested, when and where required to complete T&E activities/events. Ensure accounting of all applicable T&E resources (e.g., test articles, ranges, facilities and/or contractor support). Element 17. Verify readiness of resources (e.g., facilities, trained operators, maintainers, externally acquired test teams (e.g., red, blue) and testers, tools, properly configured test products/software/systems/platforms and instrumentation) for T&E program execution. Element 18. Ensure all required resources are deployed to the test site(s) as required and in sufficient time to provide for

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		pre-test rehearsal(s), communications, and instrumentation checks.
		Element 19. Comply with and implement policies and procedures (e.g., safety, security, environmental) required to successfully conduct test activity/event. Investigate specific policies, procedures, and operational constraints for applicable test ranges to ensure compatibility during test operations.
		Element 20. Assess all T&E related factors (resources and product maturity including hardware/software) to determine system/test article readiness (e.g., Developmental Test Readiness Reviews, DT&E Assessments, Operational Test Readiness Reviews, Live-Fire Test Readiness Reviews) before starting the test. Ensure adequate personnel are assigned to allow continual coverage for overlapping test events.
		Element 21. Plan, conduct, and report on Test Readiness Reviews.
Test Execution	Competency 7. Risk Management	Element 22. Manage test execution/risk mitigation factors (e.g., safety, schedule, resources, fault isolation, and program priority) by adapting to real-time changes/challenges to advise Test Director in order to optimize test opportunity and coverage of key parameters/factors/conditions that have significant effect on operational performance.
	Competency 8. Test Control Management	Element 23. Confirm data collection tools are valid, operators and maintainers are trained, Modeling and Simulation/Live Virtual Constructive hardware and software tools are properly integrated, and system under test is configured as required to execute the test events/activities and collect required data.
	Element 24. Confirm and monitor security and safety compliance (such as people and item/system under test) and environmental requirements constraints to protect resources and comply with established policies.	
	Element 25. Develop, validate, rehearse, and execute tests in an organized fashion to facilitate identification of completed data suitable in form and format for analysis and evaluation. Ensure data required for STAT analysis are suitable.	
	Element 26. Control the test schedule to ensure timely execution of critical tasks, assigned resources, and project milestones in order to optimize collection of data in support of evaluation objectives.	
	Competency 9. Data Management	Element 27. Verify all required and expected raw test data (i.e., forms, electronic tapes, sensors) are secure, collected, documented, and archived along with descriptions of data types, data sources (instrumentation, survey / interview, analytical tool, etc) to ensure completeness of data collected to support a system evaluation.
Element 28. Ensure validity of collected test data to meet test objectives in support of planned analysis and evaluation. Determine how cybersecurity will be used to protect the integrity of test data.		
Element 29. Distribute data per the data management plan for analysis of test results in support of the evaluation.		
Analysis	Competency 10. Data Verification and Validation	Element 30. Translate outputs from test instrumentation systems, data acquisition system methods and formats, software tools/logs, capabilities, and operation to verify and validate test data set.

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		Element 31. Identify gaps and variances in raw test data to determine data voids or outliers that may degrade analysis and evaluation.
	Competency 11. Data Reduction and Assimilation	Element 32. Reduce, translate, and analyze raw test data into organized and meaningful data products to support planned analysis of STAT-based design, evaluation, and reporting.
		Element 33. Conduct data scoring to refine demonstrated test results (i.e., fly out; models; Reliability, Availability, and Maintainability scoring conferences) to establish a complete data set of system, to include software performance.
		Element 34. Align data to specific test objectives in support of the planned analysis and the overall evaluation.
Evaluation	Competency 12. Determination of Test Adequacy	Element 35. Confirm that the tests conducted support the stated test objectives to ensure adequacy of the planned analysis and evaluation. Determine appropriate analysis and evaluation techniques to be incorporated in a system evaluation or a system-of-systems' evaluation (e.g., STAT, design of experiments, or similar).
		Element 36. Confirm that modeling and simulation met test objectives so as to augment test data and ensure adequacy of evaluation. Identify how accredited modeling and simulation (including the V&V process) should be used to supplement live test data.
	Competency 13. Validation of Test Results	Element 37. Determine whether the collected data are sufficient to accurately and completely support established measurability metrics (e.g., effectiveness, suitability, survivability).
		Element 38. Determine whether the data collected via modeling and simulation tools are sufficient to adequately supplement data collected during live T&E to facilitate a credible evaluation of the system's (or system-of-systems') realistic survivability and lethality under combat conditions.
	Competency 14. Evaluative Conclusions	Element 39. Confirm that the collected test data can sufficiently and accurately support the evaluation framework in the approved TEMP or other test strategy documentation.
		Element 40. Relate test results and evaluation conclusions to performance specification and performance results to report on operational significance. Element 41. Assess how hardware/software components are brought together to function properly as required in capability documents and what their performance brings to the larger system of systems designed to achieve required capability.
Reporting	Competency 15. Technical Reviews	Element 42. Determine and provide T&E input to all technical and programmatic reviews to support acquisition decision making.
	Competency 16. Lessons Learned	Element 43. Assess, document, apply, and/or adapt lessons learned on conduct of test data collection, analysis, and evaluation processes to ensure constant improvement of methods and processes. Element 44. [Placeholder for future changes.]
	Competency 17. Documentation	Element 45. Provide the required programmatic T&E reports and/or presentation (such as quick-look analysis, test reports, analysis reports, software sprint reports, and evaluation reports) to capture test background, methodology, limitations, results, evaluation, and recommendations to support acquisition decision making and user needs (eg, development of Tactics, Techniques, and Procedures, etc) . .

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		Element 46. Archive the data throughout the T&E planning, preparation, T&E execution, analysis, and evaluation phases to support future T&E efforts.
Professional	Competency 18. Customer Service	Element 47. Anticipate and support the needs of both internal and external customers of the acquisition community.
		Element 48. Deliver high-quality T&E products/services and commit to continuous improvement.
	Competency 19. External Awareness	Element 49. Maintain currency on local, national, and international T&E policies and trends that might affect the Department of Defense T&E acquisition community and associated stakeholders.
		Element 50. Assess T&E impact on the external environment (e.g., social, political, economic) and end user.
		Element 51. Remain actively involved and partner with other elements in the acquisition process (e.g., systems engineering, cybersecurity).
	Competency 20. Flexibility	Element 52. Respond to changes and new information and rapidly adapt to changing circumstances impacting the T&E strategy, approach, and overall plan.
	Competency 21. Communication	Element 53. Listen effectively and clarify information as needed.
		Element 54. Make clear and convincing oral presentations of technical data, analysis, and evaluation for the intended audience.
		Element 55. Write in a clear, concise, organized, and convincing manner for the intended audience.
	Competency 22. Technical Credibility	Element 56. Apply and/or convey T&E principles, procedures, requirements, regulations, and policies related to specialized technical competencies and/or needed by program decision makers.
		Element 57. Pursue self-development to advance technical and management skill sets and prepare for future advancement and changing technologies.
		Element 58. Maintain currency of technical knowledge, skills, and certifications.
	Competency 23. Critical Thinking	Element 59. Independently and objectively anticipate, identify, and analyze challenges/problems, weighing relevance and accuracy of information to affect solutions.
		Element 60. Understand the role of T&E in the overall Systems Engineering process. Generate and evaluate alternative T&E strategies and solutions.
	Competency 24. Professional Ethics	Element 61. Provide unbiased T&E results, analysis, and evaluation.
		Element 62. Exhibit personal conduct in accordance with Department of Defense ethical standards.
	Competency 25. Leadership and Management	Element 63. Hold self and others accountable for measurable, high-quality, timely, and cost-effective data, and unbiased T&E results.
		Element 64. Determine objectives, set priorities, delegate work to the right person/group, and monitor progress.
		Element 65. Accept responsibility for his/her team mistakes and shortfalls.
		Element 66. Make well-informed, effective, and timely decisions, even when data are limited or solutions produce negative consequences.
		Element 67. Anticipate and articulate implications of decisions, test, and evaluation results.
		Element 68. Inspire and foster team building and partnering.

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		<p>Element 69. Provide the vision and strategic thinking and planning necessary to ensure all the necessary resources are leveraged to the extent possible and available when needed.</p>