

DOD T&E Workforce Competency Model (June 3, 2016)

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, external SMEs, test facilities, product maturity that includes hardware/ software) based upon likelihood and consequence of occurrence to test strategy/approach and impact to the overall program plan and schedule along with mitigation recommendations.
		Element 2. Develop risk mitigation for T&E risk factors in accordance with the processes and procedures found in the Department of Defense Risk Management Guide to cover system risk elements throughout 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, Capability Production Document, Program Protection Plan, Cybersecurity Strategy, Information Support Plan, System Threat Assessment Report, Environmental, Safety and Occupational Health and concept of employment/operation) to identify evaluation criteria to support T&E planning efforts.
		Element 5. Assess whether the capability requirements are well defined so as to measure in test and are relevant to the operational mission.
		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) 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, Software Systems Integration Labs, Modeling & Simulation) and identify shortfalls that will require investments to meet T&E infrastructure sufficiency.
	Competency 3. Program T&E Strategy Development	Element 8. Incorporate all policies, practices and procedures with the technical requirements of a program to develop and document a T&E strategy that supports the program's acquisition strategy. Utilize the full spectrum of the integrated testing process in the T&E strategy. Identify how the following components fit together during systems development: CT, DT, OT, and LFT. Identify where environmental, interoperability, cybersecurity, and mission-level testing should fit into system development. Determine the appropriate criteria for evaluating OT parameters (Effectiveness, Suitability, and Survivability) and LFT&E parameters (Lethality and Vulnerability).

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		<p>Element 9. Develop and document the test and evaluation 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.</p> <p>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.</p> <p>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 test and evaluation strategy, approach, and the overall program plan.</p> <p>Element 12. Translate the T&E strategy into the appropriate test document (e.g., Test and Evaluation Master Plan (TEMP), 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.</p>
	Competency 4. Test Cost Estimating	<p>Element 13. Provide financial cost estimates for T&E support to ensure T&E resources are available during development and production of the system lifecycle.</p>
	Competency 5. Coordination of T&E Activities and Events	<p>Element 14. Interact with all organization/activities that require information/ activity exchange to successfully complete the test planning as enumerated in the T&E strategy contained in the Test and Evaluation Master Plan.</p> <p>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. Determine how to protect the integrity of test data.</p> <p>Element 16. Execute tasking orders and funding streams to commit resources as requested, when and where required to complete T&E activities/event.</p>
	Competency 6. Test Readiness	<p>Element 17. Verify readiness of resources (e.g., facilities, trained operators, maintainers, externally acquired test teams (e.g. red, blue, etc.), and testers, properly configured test products/software/systems/platforms and instrumentation) for T&E program execution.</p> <p>Element 18. Ensure all required resources are deployed to the test site(s) as required and in sufficient time to provide for pre-test rehearsal(s), communications, and instrumentation checks.</p> <p>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.</p>

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		<p>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.</p>
		<p>Element 21. Plan, conduct, and report on Test Readiness Reviews.</p>
Test Execution	Competency 7. Risk Management	<p>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.</p>
	Competency 8. Test Control Management	<p>Element 23. Confirm data collection tools are valid, operators and maintainers are trained, Modeling and Simulation/Live Virtual Constructive (LVC) 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.</p>
		<p>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.</p>
		<p>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.</p>
	<p>Element 26. Control the test schedule to complete scenarios and scripts within boundaries of test plan and to optimize collection of data to support evaluation objectives.</p>	
	Competency 9. Data Management	<p>Element 27. Verify all required and expected Raw Test Data (i.e. forms, electronic tapes, sensors, etc.) are secure, collected, documented and archived along with descriptions of data to assure completeness of data collected.</p>
<p>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.</p>		
<p>Element 29. Distribute data per the data management plan for analysis of test results in support of the evaluation.</p>		
Analysis	Competency 10. Data Verification and Validation	<p>Element 30. Translate outputs from test instrumentation systems, data acquisition system methods and formats, capabilities and operation to verify and validate test data set.</p>
	<p>Element 31. Identify gaps and variances in raw test data to determine data voids or outliers that may degrade analysis and evaluation.</p>	
	Competency 11. Data Reduction and Assimilation	<p>Element 32. Reduce, translate and analyze raw test data into organized and meaningful data products to support planned analysis, evaluation, and reporting.</p>
		<p>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.</p>
<p>Element 34. Align data to support specific test objectives in support of the planned analysis in support of the overall evaluation.</p>		

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Evaluation	Competency 12. Determination of Test Adequacy	<p>Element 35. Confirm that the tests conducted support the stated test objectives (i.e. does the product satisfy system requirements) 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.</p> <p>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.</p>
	Competency 13. Validation of Test Results	<p>Element 37. Determine if the collected data are sufficient to accurately and completely support established measurability metrics (e.g. effectiveness, suitability, survivability, etc.).</p> <p>Element 38. Determine if 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.</p>
	Competency 14. Evaluative Conclusions	<p>Element 39. Confirm that the collected test data can sufficiently and accurately support the evaluation framework in the approved Test & Evaluation Master Plan.</p>
		<p>Element 40. Relate test results and evaluation conclusions to performance specification and performance results to report on operational significance.</p>
		<p>Element 41. Assess how hardware/software components are brought together to function properly as required in capability documents and what its performance brings to the larger System of Systems designed to achieve required capability.</p>
	Reporting	Competency 15. Technical Reviews
Competency 16. Lessons Learned		<p>Element 43. Assess and document lessons learned on conduct of test data collection, analysis, and evaluation processes to ensure constant improvement of methods and processes.</p> <p>Element 44. Apply and/or adapt previous lessons learned from similar test activities/events.</p>
Competency 17. Documentation		<p>Element 45. Provide the required programmatic T&E reports and/or presentation (such as quick look analysis, test reports, analysis reports and evaluation reports) to capture test background, methodology, limitations, results, evaluation, and recommendations to support decision making.</p> <p>Element 46. Archive the data throughout the T&E planning, preparation T&E execution, analysis and evaluation phases to support future T&E efforts.</p>
Professional	Competency 18. Customer Service	<p>Element 47. Anticipate and support the needs of both internal and external customers of the acquisition community.</p> <p>Element 48. Deliver high quality T&E products/services and commit to continuous improvement.</p>
	Competency 19. External Awareness	<p>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.</p> <p>Element 50. Assess T&E impact on the external environment (e.g. social, political, economic) and end user.</p>

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		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 test and evaluation 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, analyze challenges/problems, weighing relevance and accuracy of information to affect solutions.
		Element 60. 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 test and evaluation results.
		Element 64. Determine objectives, sets priorities, delegates work to the right person/group, and monitors 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.		
	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.	