

## **TST102 Assignment 1 - Submission Guidance**

**Status:** Completed **Due:** No Due Date

### **Notes**

Successful completion of this course requires that you submit two separate assignments to the TST102 faculty for grading. Instructions regarding each assignment are presented in the "Learning Content" section of your course and will be presented to you following the completion of Lesson 17 content, as well as Lesson 19 content.

### **Academic Integrity Standards:**

A DAU student's submission of work for academic credit indicates that the work is the student's own unless the work is designed as a team effort. Student's must properly acknowledge outside assistance and citations and truthfully report the academic position at all times. Please see Student Standards of Conduct, available at <https://www.dau.edu/training/p/student-policies-info>, for more information.

### **Assignment 1 Submission Procedures:**

Please email your work as an attachment (Microsoft Word document) to: [TST102@dau.edu](mailto:TST102@dau.edu). Your email subject line should read: "SRAW Test Plan".

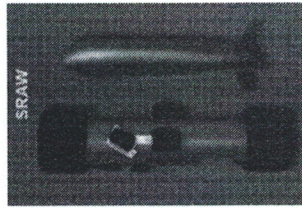
After sending your email, please select "**Mark Complete**" below and proceed to launch "**TST 102 Assignment 1 - Finalize Submission**;" this step is required in order for our faculty to assign a grade to your work and pass you through the assignment.

### TST102 Fundamentals of Test Evaluation Lesson 17 - Assignment

#### Table of Contents

#### Assignment 1: Developmental Test Planning

You are designing a developmental test to verify that the SRAW safe-arm device (SAD) arms the SRAW in compliance with both the Minimum Arming Distance Critical Technical Parameter (CTP) and the Minimum Engagement Range Key Performance Parameter (KPP) identified in the SRAW TEMP. While the impact of the Minimum Arming Distance CTP on SRAW arming should be self-evident, the Minimum Engagement Range KPP dictates that SRAW arming must occur before the SRAW missile reaches that distance. Furthermore, the test should confirm that the SAD performs at a reliability level consistent with the Reliability Key System Attribute (KSA), also identified in the TEMP. The SRAW TEMP provides additional background information and can be found in the "Tools and Resources" link on the left side of the TST102 course navigation overview screen.



Note that this developmental test is limited in scope, addressing only SRAW arming. Items beyond the scope of this test need not be considered.

The test is to be a system-level developmental test that will consist of a number of open-air SRAW missile launches to occur at the China Lake range complex.

The following assumptions and historical information should inform test design:

- SAD design is stable and based on the design of devices already used in similar weapon systems. Additionally, subcomponent and component lab testing and extensive modeling and simulation efforts have all been accomplished with very positive results.

### TST102 Fundamentals of Test Evaluation Lesson 17 - Assignment

#### Table of Contents

#### Assignment 1: Developmental Test Planning, Cont.

- Instrumentation and telemetry kits that monitor and transmit activity from the SRAW safe-arm device are available for installation on SRAW test missiles. These kits are compatible with the data collection capabilities at China Lake.
- The Technical Evaluation (DT II) Systems identified in the TEMP are the test assets that should be used for this test. These systems can be configured to include either a live (explosive) warhead or an "inert" (non-explosive) warhead that replicates the weight and balance of the live warhead. The warhead type does not affect SRAW flight performance.
- To simplify planning, assume a binomial distribution and use the nomograph provided when addressing the Confidence Levels / Test Article / Target Requirements section

#### As part of the test design process, answer the questions in each area below using short (1-2 sentence) responses:

- **Test Objective:** In terms of confirming that the SAD arms the SRAW in compliance with the CTP and KPP requirements mentioned above, what are acceptable SRAW arming distances (or range of distances) in terms of distance from the shooter? Note here that the SRAW arming distance refers to the distance at which the SAD transitions from SAFE to ARM.
- **Test Scenario / Set-up:** In terms of test data, what specific physical parameter(s) should this test measure? How will this be done? Will targets be used and if so, why and where will they be positioned relative to the shooter? Will live or inert warheads be used and why?
- **Success Criteria:** In terms of the safe-arm device meeting requirements, what constitutes success for an individual trial? What results (if any) might disqualify an individual trial from being a test "counter" (i.e., does an individual trial count if the SRAW fails to launch)?



Table of Contents  
IST102 Fundamentals of Test Evaluation  
Lesson 17 - Assignment

Assignment 1: Developmental Test Planning, Cont.

- **Test Article / Target Configuration:** What are the differences (if any) between the SRAW missiles that will be used for this test and those that will be deployed for combat? Additionally, if targets are to be used, how would you describe them in general terms (e.g., moving tanks with reactive armor or stationary shapes made of some other material)?
- **Confidence Levels / Test Articles / Target Requirements:** What reliability and confidence levels are used and why? Based on these values and assuming 0 failures during testing, how many test articles are needed? How many targets are needed? Lastly, if the Program Manager informs you that SAD performance will be evaluated on 60 launches, how many failures are acceptable given the reliability and confidence levels used?

If you have questions specific to this assignment, email TST102@dau.edu with your question(s); an instructor will respond as soon as possible.

Save your responses to the questions above in MSWord (.doc or .docx) format. When you are ready to submit your responses for grading, navigate to the Assignments section of the course (outside of this content window) for instructions. A passing grade is required for graduation.

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Page 3 of 3

Back Next

Help

