Testing Protocol Process

Testing Protocol Process:

Testing of new equipment/processes/apps/features/capabilities (referred to as DUT in the remainder of the document) to be used at national events is to be done in steps to validate the DUT and verify that it will not impede the proper running or invalidate the results of a national event.

Proper documentation is expected to be provided and reviewed at each step by the SEMI commission. This may include witnessing the demonstration at any individual step. Any hardware/software/component that will interface with hardware (e.g. scoring machines) must include a statement that it will not interfere with the proper functioning/operation of the equipment to which it is attached.

The SEMI commission may waive/adjust the review, documentation, and/or process at their discretion depending on the nature and the maturity of the DUT being considered.

Testing levels are as follows:

1) Laboratory Testing and demonstration: DUT is tested and demonstrated in a laboratory/development environment. Laboratory environment is considered a controlled self-contained environment where the DUT may be tested without inference. All tests that are carried out in subsequent steps must first be demonstrated in the laboratory environment.
2) Small-scale testing and demonstration: DUT is demonstrated in a small-scale demonstration that validates the result from the laboratory tests in a semi realistic environment. An example would be testing/demonstration of DUT at a club with a few athletes first on a single strip then expanding to several strips. For a tournament related process or equipment this would then proceed to a small event and expand to larger events. All tests and demonstrations must be carried out in a small-scale environment before proceeding to large scale testing and demonstrations.
3) Large-scale testing and demonstrations: A DUT that has been successfully demonstrated in small-scale testing (only feature and capabilities that have been successfully demonstrated in steps 1 and 2 are permitted) may be tested/demonstrated on a larger scale in a realistic environment. This would involve testing/demonstration in environment similar to its expected end use environment/state. An example environment for this would a regional event across multiple strips or pods simulating a national event.
4) National event testing demonstration: A DUT that has successfully been demonstrated/tested in a large-scale environment may be tested/demonstrated at a national environment. Only DUTs that have been successfully demonstrated in step

3 are permitted to be tested/demonstrated. Expect any testing/demonstration to be scaled as deemed appropriate by the US SEMI commission to limit impact on the events and the validity of the events, e.g. initial testing/demonstration done in a pod that is not actively being used in an event or in a pod after hours before allowing DUT to be used during an actual event or in an actual event).

Testing Protocol Proposal Template

This template is to be filled out to request permission to test or demonstrate new equipment, processes, capabilities, apps, or features at a regional or national event.

Section 1: General Information

Project Name	
Prepared By	
Date Submitted	
Version Number	
Proposed Start Date	
Anticipated Completion Date	
Testing Level	

Section 2: Objective & Scope – provide definition of what is expected

Objective:

What is the purpose of the testing? What questions should the test answer? This a one or two sentence statement of purpose for the test. Include level of the test (i.e. Laboratory, small-scale, large-scale, National event)

Scope:

Define the operational environment, define the boundaries: what will be tested, what will not, and any limitations (constraints or exclusions). This a short description of extent of the test.

Section 3: Test Description

Following the table below provide diagram of test setup as appropriate. Show all major components of the test. Label inputs, outputs, and show location of data recorders. (For relatively simple tests the table in this section may be omitted provided sections 2 and 4 cover the information required. Consult with your assigned SEMI liaison)

Test Type	Functional, Regression, Environmental, Safety, Compliance, Usability, etc. Include level of test (i.e. Laboratory, small-scale, large-scale, National event)
Test Environment	Describe the equipment, software, network, lab conditions, etc.
Test Inputs	Describe input data, variables, and configuration parameters
Test Procedure	Describe the specific test procedure High level description of the test procedure. For simple tests this can be refered to the detailed test plan in section 4. However, for complex test this should describe the basic test procedure.
Expected Outcomes	Define success criteria and acceptance thresholds.
Test Methodology	Describe the procedures and workflow (attach SOPs if needed)

Section 4: Detailed Test Plan and Schedule

Detailed description of the specific test plan and schedule (procedure) e.g. initial conditions, what variables are being changed and when, what outputs are being monitored/recorded, how are results/conditions being monitored recorded. This test should have been previously demonstrated in a laboratory/development environment, small-scale test, or large-scale test as appropriate. Provide documentation that test/demonstration has been successfully completed in the previous process step (i.e. laboratory/development, small-scale, or large-scale environment testing and demonstrations as applicable).

Use the table below to outline each test step (as appropriate): Test steps may have sub-steps. There also may be multiple tests. Add additional columns as appropriate to describe your test. Recommend using spreadsheet for this and providing as a separate file.

Section 5: Risk Assessment

Please provide a risk assessment in a table format as below.

Risk	Likelihood	Impact	Mitigation Strategy

Section 6: Resources Required

Personnel: (roles and estimated hours e.g., software engineers, cybersecurity analysts, test evaluators)

Equipment/Tools: (hardware/software e.g., automated testing suites, STIG checkers, DevSecOps pipelines)

Facilities/Environments: (labs, access, special environments e.g., development, test, staging, production networks with appropriate ATOs)

Budget Estimate (if applicable): $

Section 7: Data Collection & Reporting

Data to be Collected: (e.g., performance metrics, error logs/defect log, pass/fail counts)

Reporting Format: (e.g., summary report, raw data spreadsheet, compliance matrix, scorecards, defect trends)

Section 8: Approval

Name	Role	Signature	Date

Appendix: Summary of previous test results

Please provide a summary of previous test results that verify testing is ready for the proposed level.