

Paper for Consideration by TSMAD27
S-100/S-101 Test Bed Framework Document

Submitted by:	TSMAD Vice Chair
Executive Summary:	This paper outlines the basic framework for the S-100 Test Bed for TSMAD consideration.
Related Documents:	TSMAD27 4.4.3 TSMAD27 4.4.3A
Related Projects:	S-101, S-100

Introduction / Background

As S-100 and S-101 continue to mature in the TSMAD development process, there is a pressing need to develop an overarching test strategy and framework for the S-100 testbed. This is so that the S-101 standards development complies with TR 2/2007 and to ensure that the standard has been properly tested and vetted throughout the IHO standards approval process. In order to do so there needs to be a high level strategy and an accompanying test framework to ensure that all aspects of testing are covered. This paper will focus on the S-100 test framework.

Analysis/Discussion

There are different methodologies used in the software development community in order to develop and test specifications, the United Kingdom proposed that S-100 utilize a systems engineering approach that follows the ISO 15288 standard. This standard:

“provides a common process framework covering the life cycle of man-made systems. This life cycle spans the conception of ideas through to the retirement of a system. It provides the processes for acquiring and supplying systems. In addition, this framework provides for the assessment and improvement of the life cycle processes.”

This framework will specifically use the Technical Process defined in part 5.5 of ISO 15288 which consists of the following processes;

- a) Stakeholder Requirements Definition Process;
- b) Requirements Analysis Process;
- c) Architectural Design Process;
- d) Implementation Process;
- e) Integration Process;
- f) Verification Process;
- g) Transition Process;
- h) Validation Process;
- i) Operation Process;
- j) Maintenance Process;
- k) ~~Disposal Process~~ – This process is not applicable for this framework.

The framework document is then broken up into nine phases which will document all of the above. The September workshop managed to flesh out the framework for phases 1-3, including holding a brainstorming session for different types of test scenarios and test data that will be needed. It should be noted that this framework is considered a living document and as the test bed progresses more detail will be filled in.

Annex A is a Copy of the S-100 Test Framework

Annex B is the preliminary list of test scenarios and types of test datasets that will be needed.

Annex C Sample Test Template

Conclusions

While the framework continues to be a work in progress, there is a need for TSMAD to approve the construct of the framework. In addition HSSC4 approved funding for the development of the actual test cases. At TSMAD26 it was decided to defer the test case development to post TSMAD27 pending the outcome of the test strategy

meeting. It is the opinion of the vice Chair of TSMAD that there is now enough information to develop the test cases for the first three phases of the S-100 framework document as well as the specific test cases for S-101 requirements.

Recommendations

The following are recommendations for TSMAD to consider:

- Does TSMAD approve of the format used for the S-100 test bed framework
- Does TSMAD approve of the phased approach that was recommended by the Test Strategy Workshop Participants
- Does TSMAD have any additional test scenarios and types of test data to propose for the test bed
- Does TSMAD agree to letting out the test case development contract to begin writing formal test cases for Phase 1 to 3 as outlined in the test framework and for those requirements as defined in S-101.

Action Required of TSMAD

The TSMAD is invited to:

- a. agree to the above recommendations