

Distance Learning - Diagnostic, Advisement, and Technical Research  
(DL DART) – *(TADLP modified)*

Modifying the minNormalizedMeasure manifest tag

Or Changing a SCORM exam Mastery Score

## Issues and Solutions Report

Provided for

The Army Distributed Learning Program

(TCM TADLP)



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## **Introduction**

This document describes how to change the assessment content mastery score, for a SCORM single assessment SCO package, from 75 to 70. Master Score is also identified as the minimum passing score. A detailed description of the solution implemented by the DL DART Team and the process by which the solution was implemented can be found in the following sections of this document. The description of the solution includes the name and path of all files modified as well as the method by which the course's Shareable Content Object Reference Model (SCORM) Content Packages were updated for the next iteration.

## **Notes**

**Requirements:** This document describes solutions which require strong expertise in the SCORM 2004 3<sup>rd</sup> Edition specification, eXtensible Markup Language (XML) development, and Army Learning Management System (ALMS) network operations. All modifications to course content were performed using a text editor capable of editing XML files.

**Methodology:** The course of action taken in implementing the solution included testing of content on the ALMS Production Server with clients on the Nonsecure Internet Protocol Router Network (NIPRNET). The DL DART Team performed testing to validate the efficacy of the solution under circumstances the learner might experience when viewing the course content.

# Course Content

## 1 - Incorrect Reported Statuses on Assessments

Summary	
Issue	<p>The value for the minimum normalized measure of the Shareable Content Object (SCO) primary objective was incorrectly set to 75 instead of 70.</p> <p>The course of action for implementing a solution required modification of the SCORM manifest file within each affected assessment’s SCORM Content Package to modify the minimum normalized measure of the SCO primary objective to contain the correct value.</p>
Solution	
Source Files	<p><b>Filename:</b> N/A</p> <p><b>Path:</b> N/A</p>
Published Files Modified	<p><b>Filename:</b> <i>imsmanifest.xml</i></p> <p><b>Path:</b> .</p>
Actions Taken	<p><b>Summary:</b></p> <p>The following actions were taken to modify the <i>imsmanifest.xml</i> file to change the minimum normalized measure of the primary objective to contain the correct value, 70 instead of 75:</p> <ol style="list-style-type: none"> <li>1. Opened the SCORM Content Package</li> <li>2. Opened <i>imsmanifest.xml</i> in a text editor</li> <li>3. Modified minimum normalized measure value</li> <li>4. Saved changes to file</li> <li>5. Saved changes to the SCORM Content Package</li> </ol> <p><b>Note:</b> See Appendix A for details on specific code changes made to <i>imsmanifest.xml</i>.</p>

## **Testing and Validation**

The DL DART Team performed testing and validation of the solution described in this document on the ALMS Production Server. The validation process included a review of the efficacy of modifications made to course content to ensure all reported issues with content were addressed. Content testing logs generated with the Advanced Distributed Learning (ADL) SCORM 2004 3<sup>rd</sup> Edition Conformance Test Suite and the Army suite of test tools are available separately from this report with the modified SCORM Content Packages. See Appendix B for ALMS Production Server validation result screenshots.

## Appendix A: SCORM Manifest Modifications

One modification was made to each affected SCORM Content Package to adjust the minimum normalized measure value for the primary objective.

### Sequencing: Primary Objective Minimum Normalized Measure

The minimum normalized measure for the assessment SCO's primary objective within the SCORM manifest was modified to contain the correct value of 70. An excerpt from the SCORM manifest from posttest assessment B for the *Policies* Module A is shown as an example in the figures below with additions to the manifest highlighted.

#### Sequencing in *imsmanifest.xml* (before)

```
<imsss:sequencing>
<imsss:objectives>
<imsss:primaryObjective satisfiedByMeasure = "true" objectiveID = "SCO_OBJ_PTAB">
<imsss:minNormalizedMeasure>0.75</imsss:minNormalizedMeasure>
<imsss:mapInfo targetObjectiveID = "obj_assessment" writeNormalizedMeasure = "true"
writeSatisfiedStatus = "true" />
</imsss:primaryObjective>
</imsss:objectives>
</imsss:sequencing>
```

Figure 1: Sequencing in *imsmanifest.xml* before modification

#### Sequencing in *imsmanifest.xml* (after)

```
<imsss:sequencing>
<imsss:objectives>
<imsss:primaryObjective satisfiedByMeasure = "true" objectiveID = "SCO_OBJ_PTAB">
<imsss:minNormalizedMeasure>0.70</imsss:minNormalizedMeasure>
<imsss:mapInfo targetObjectiveID = "obj_assessment" writeNormalizedMeasure = "true"
writeSatisfiedStatus = "true" />
</imsss:primaryObjective>
</imsss:objectives>
</imsss:sequencing>
```

Figure 2: Sequencing in *imsmanifest.xml* after modification

## Appendix B: ALMS Production Test Results

This section contains screenshots of Attempt Data for each SCORM Content Package tested by the DL DART Team on the ALMS Production Server. Assessment content was completed using fail and pass paths to validate the solution. Each screenshot demonstrates the score, including the minimum passing score, and statuses rolled up at the time of completion of each assessment's SCORM Content Package when completed.

**NOTE:** Original report included Module A, Posttest A; Fail and Pass paths in Figures 3 & 4

### Module A Posttest B

Results: DL DART Posttest\_ab\_Final > Attempt 1

**Attempt Data**

Content Attempt Status    Completed  
 Completion Status        Incomplete  
 Success Status            Failed  
 Scaled Score              0.42

**Results By Lesson**

Lesson	Completion Status	Success Status	Total Attempts	Last Accessed	Time Spent	Scaled Score	Scaled Passing Score	Objectives	Responses	History
Policies	Incomplete	Failed				0.42		<a href="#">Objectives</a>		
Posttest B	Completed	Failed	1	10/23/2014	00:13:07	0.42	0.7	<a href="#">Objectives</a>	<a href="#">Responses</a>	<a href="#">History</a>

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Figure 3: Module A Posttest B Fail Path

Results: DL DART Posttest\_ab\_Final > Attempt 2

**Attempt Data**

Content Attempt Status    Completed  
 Completion Status        Completed  
 Success Status            Passed  
 Scaled Score              1.0

**Results By Lesson**

Lesson	Completion Status	Success Status	Total Attempts	Last Accessed	Time Spent	Scaled Score	Scaled Passing Score	Objectives	Responses	History
Policies	Completed	Passed				1		<a href="#">Objectives</a>		
Posttest B	Completed	Passed	1	10/23/2014	00:13:13	1	0.7	<a href="#">Objectives</a>	<a href="#">Responses</a>	<a href="#">History</a>

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Figure 4: Module A Posttest B Pass Path

**NOTE:** Original report included Module B, Posttest A; Fail and Pass paths in Figures 7 & 8

# Module B Posttest B

**Results: DL DART Posttest\_bb\_Final > Attempt 1**

**Attempt Data**

Content Attempt Status: Completed  
 Completion Status: Incomplete  
 Success Status: Failed  
 Scaled Score: 0.32

**Results By Lesson**

Lesson	Completion Status	Success Status	Total Attempts	Last Accessed	Time Spent	Scaled Score	Scaled Passing Score	Objectives	Responses	History
Policies	Incomplete	Failed				0.32		<a href="#">Objectives</a>		
Posttest B	Completed	Failed	1	10/23/2014	00:00:43	0.32	0.7	<a href="#">Objectives</a>	<a href="#">Responses</a>	<a href="#">History</a>

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Figure 5: Module B Posttest B Fail Path

**Results: DL DART Posttest\_bb\_Final > Attempt 2**

**Attempt Data**

Content Attempt Status: Completed  
 Completion Status: Completed  
 Success Status: Passed  
 Scaled Score: 1.0

**Results By Lesson**

Lesson	Completion Status	Success Status	Total Attempts	Last Accessed	Time Spent	Scaled Score	Scaled Passing Score	Objectives	Responses	History
Policies	Completed	Passed				1		<a href="#">Objectives</a>		
Posttest B	Completed	Passed	1	10/23/2014	00:14:27	1	0.7	<a href="#">Objectives</a>	<a href="#">Responses</a>	<a href="#">History</a>

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Figure 6: Module B Posttest B Pass Path