AEN LMS & Contents Interoperability Experiment

(ALIVE 2005)

Interoperability validation testing of   and contents

1: Overview

1.1 Purpose

(1) Compatibility check to SCORM standard of each country LMS and content products used TestSuite

(2) Interoperability check between each country LMS product and content product by validation testing

(3) Check of effectiveness of TestSuite and validation testing in interoperability improvement

(4) Information exchange of each country ADL regarding interoperability

1.2 Validation testing participating country and product numbers

Participating country name	LMS product number	Content product number	SCORM1.2	SCORM2004
South Korea	1	1		
Japan	2	3		
Malaysia	1	1		
Singapore	1	1		
Vietnam	1	1		
Total	6 products	7 products	6 products	7 products

Observer participating country: 7

United States(ADL)

Cambodia / China / Laos / Myanmar / Philippines / Thailand

LMS product

Country name	Body or organization name	LMS product name	Version	
			SCORM1.2	SCORM2004
Singapore	Learning Standards Technical Committee, Singapore	Moodle Version 1.5.2		
Viet Nam	New Century Soft Company	Trainware		
Malaysia	Multimedia University, Malaysia	MMLS (Multimedia Learning System)		
Korea	ALEX IT	NetCampus21		
Japan	NTT resonant	AcademicWare		
	Compaq Corporation	Open Source LMS		
Total		6 products	3 products	3 products

4

Content product

Country name	Body or organization name	Content product name	Version	
			SCORM1.2	SCORM2004
Singapore	Learning Standards Technical Committee, Singapore	iT21,Ednovation-Biology, VernierCalipers		
Viet Nam	New Century Soft Company	SoftSimulator, iLCBuilder		
Malaysia	Multimedia University, Malaysia	digital signal processing, e-Business		
Korea	ALEX IT			
Japan	Compaq Corporation	InfomationTechnology-skillCheck06.zip		
	Sangyo Noritsu University	Test2.zip		
	AEN WG-1	Baseball		
Total		products	3 products	4 products

1.3 Schedule

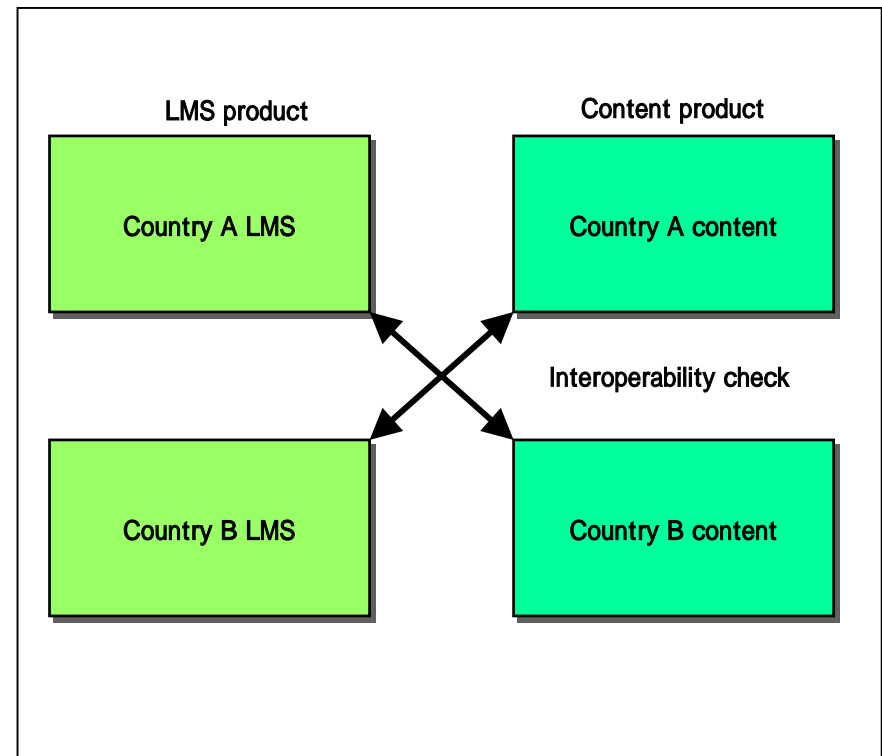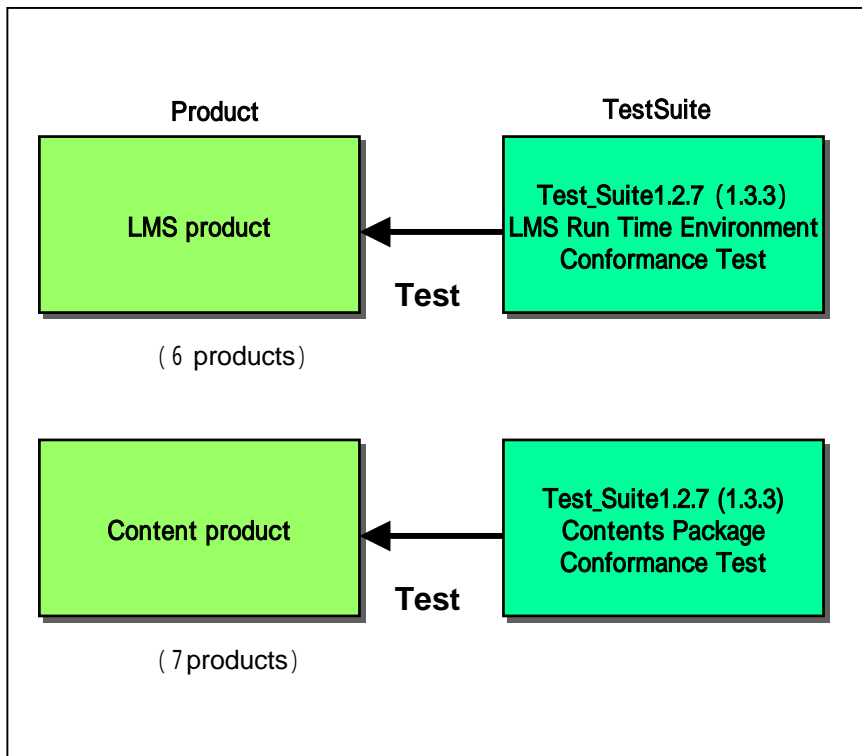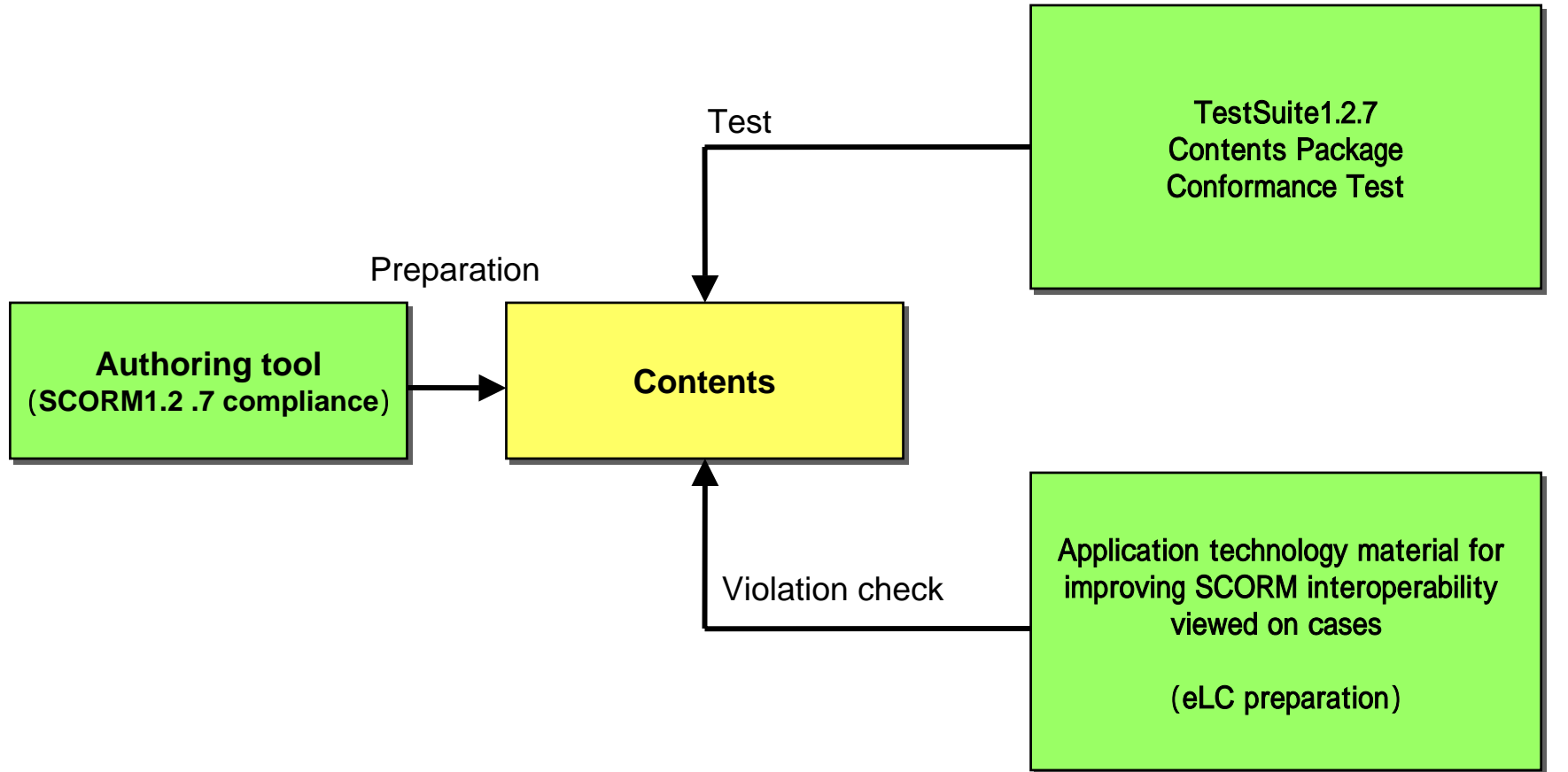| Work description \ Year & month	2005							2006		
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
Planning	●———————————————————→									
Validation testing					●——————————————→					
Interim report summery						●————→				
AEN international conference								Dec. 14	15	
Remaining works (validation testing. etc.)								●——————————→		
Report preparation										●————→

2.1 SCORM version of testing products

Both products of SCORM1.2 SCORM2004 shall be concerned

2.2 Testing method

(1) SCORM standard compatibility testing used test suite

(2) Inter operability testing between each country products

Product | TestSuite

LMS product ← Test_Suite1.27 1.33 LMS Run Time Environment Conformance Test

Test

products

Content product ← Test_Suite1.27 (1.33) Contents Package Conformance Test

Test

products

LMS product | Content product

Country A LMS | Country A content

Interoperability check

Country B LMS | Country B content

Test

Preparation

TestSuite1.27
Contents Package
Conformance Test

Authoring tool
SCORM1.2 .7 compliance

Contents

Violation check

Application technology material for
improving SCORM interoperability
viewed on cases

eLC preparation

eLC e-Learning Consortium Japan

8

3: Testing result

3.1: Compatibility testing by TestSuite

(1) Compatibility testing result of SCORM1.2 product　1 LMS product among 6 products was judged to be non-compatible.

LMS compatibility testing result

Product name	LMS product	LMS product	LMS product
Compatibility	×		
LMS compatible level		LMS-RTE2	Not indicated
Character code	UTF-8	UTF-8	UTF-8
Number of error occurred	4 Note1	0	0

(Note 1) Unknown cause

Content compatibility testing result

Product name	Contents product	Contents product	Contents product
Compatibility			
SCO compatible level	SCO-RTE1	SCO-RTE1+Mandatory	SCO-RTE1+Mandatory
Meta-data compatible level	MD-XML1+Optional	MD-XML1+Optional	
Number of error occurred	0	0	0

(2) Compatibility testing result of SCORM2004 product

LMS compatibility testing result

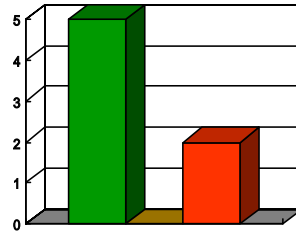| Product name	LMS Product	LMS Product	LMS Product
Compatibility	Note1	Note1	
Character code	UTF-8	UTF-8	UTF-8 KS5601
Number of error occurred			

(Note 1): Being tested

Content compatibility testing result

Product name	Contents Product	Contents Product	Contents Product	Contents Product
Compatibility				
Character code	UTF-8	UTF-8	UTF-8	UTF-8 KS5601
Number of error occurred				

Each country's opinion reagrding validation testing by TestSuite
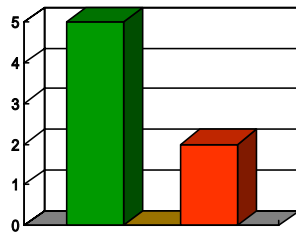
Validation testing was meaningful

- Was meaningful: 71%
- Was not meaningful: 0%
- No answered: 29%

I think it was meaningful. TestSuite has full coverage, and it is extremely difficult to perform it with individual company (Japan)
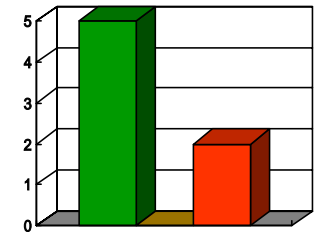
Do you wish to continue validation testing next year and thereafter ?

- Wish to continue: 71%
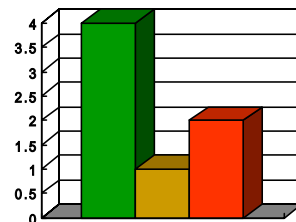- Does not wish to continue: 0%
- Not answered: 29%

Do you think TestSuite is useful?

- Thinks to be useful: 71%
- Does not think to be useful: 0%
- Not answered: 29%

Is TestSuite easy to use?

- Easy to use 50
- Not easy to use 16
- Not answered 34

Very careful attention must be paid for LMS testing (Korea)

It takes a long time for testing, and always stops once it is performed (Japan)

I think testing can be performed by dividing test item every each theme (Japan)

It is better if Sequencing and Navigation tests can be performed (Japan)

SCORM conformant is not sometimes displayed even no error on Log.It will be better if question and answer summery on case by case is available   Japan

11

3.2 Result of interoperability validation testing between each country products

SCORM1.2 standard compatible product

Participating products: 4 countries, 8 products

	Product name	Content			
		Content product	Content product	Content product	Content product
L M S	LMS product				
	LMS product				
	LMS product				
	LMS product				

Interchangeability   Perfect   ALMOST   Run But ManyProblem ×   Doesn't Work

Import Successfully. But it does not work correctly.
This is not related to SCORM
Some other function does not work properly.

Encoding Problem

3.2 Result of interoperability validation testing between each country products

SCORM2004 standard compatible product

Participating products: 4 countries, 10 products

LMS	Content							
	Product name	Content product	Content product	Content product	Content product	Content product	Content product	Content product
	LMS product							
	LMS product							
	LMS product	Not here.　Bringback Contents to Country and Test						

Interchangeability　　Perfect　　ALMOST　　Run But ManyProblem　×　Does'nt　Work

2　Error is not related to SCORM.

Joint validation testing between each country's products
Confirmed points and results

Testing was performed during this conference (Dec. 14 and 15), and the results are being arranged.

The results will be inserting in AEN portal site later.

3.3 Authoring tool validation testing

Test purpose and method

Using the authoring tool compatible with marketing SCORM1.2 standard, contents were prepared, and TestSuite1.2.7 was used for check of operability.

Concerned products

Authoring tool   5 products

Participated authoring tool	Compatibility
Authoring tool	
Authoring tool	
Authoring tool	
Authoring tool	
Authoring tool	×

Confirmed points

4 of 5 authoring tool products were no problem in SCORM standard. 1 authoring was confirmed to be failure.

4: Information exchange of each ADL regarding interoperability

Each country's opinion and request

5: Interim summery of ALIVE activity results

(1) Results of compatibility testing to SCORM standard used TestSuite

1 of LMS products was detected to be SCORM standard non-compatibility.
2 products are being investigated.

Execution of   TestSuite and validation testing is effective for interoperability improvement of LMS product.
By opening the case of failure description confirmed by testing, improvement of many products interoperability that was not participated in testing can be expected.

All the 7 content products are compatible with SCORM standard.

(2) Results of validation testing of authoring tool products (only in Japan)

As the testing result of 5 authoring tool products that are compatible with SCORM1.2, 1 product was detected to not be compatible with SCORM standard.

Execution of   TestSuite and validation testing is effective for interoperability improvement.

(3) Results of interoperability validation testing between each country's products

The testing results are being arranged, and results and data will be reporting later.

(4) Each country's information exchange

There are many opinions that execution of validation testing and ADL TestSuite are effective for interoperability improvement.

The TestSuite for SCORM2004 compatible LMS is difficult to complete the test, and there are opinions that it takes a long time for testing.

Thank you For listening