Enabler Test Report DRM v1.0
OMA Test Fest (November 2003)
Version 25-Nov-2003

Open Mobile Alliance
OMA-Enabler_Test_Report-DRM-v11-2003-11-25

Contents

1. Scope

This report describes the results from the testing carried out at OMA Test Fest (November 2003) concerning DRM enabler version 1.0.

2. References

2.1 Normative References

[OMAIOPPROC]   OMA Interoperability Policy and Process, http://www.openmobilealliance.org/

[DRMEICS]   Enabler Implementation Conformance Statement, OMA DRM 1.0 Enabler Release, Draft Version 09-Sep-2003, http://www.openmobilealliance.org/

[ERELD]   "Enabler Release Definition for DRM Version 1.0" Open Mobile Alliance™. OMA-ERELD-DRM-v1_0. URL:http://www.openmobilealliance.org/

[DL_SPEC]   OMA DRM 1.0 specifications

[EPTR]   Enabler Product Test Report

[ETP]   Enabler Test Plan

[ETS]   Enabler Test Specification for DRM 1.0
                        Approved Version 1.0, 09-Sep-2003

2.2 Informative References

3. Terminology and Conventions

3.1 Conventions

This is an informative document, i.e. the document does not intend to contain normative statements.

3.2 Definitions

None.

3.3 Abbreviations

EICS	Enabler Implementation Conformance Statement
EPTR	Enabler Product Test Report
ETP	Enabler Test Plan
ETS	Enabler Test Specification
MM	Multimedia Message
MMS	Multimedia Messaging Service
MMSC	MMS Proxy/Server
OMA	Open Mobile Alliance
PR	Problem Report

4. Summary

This report gives details of the testing carried out during the OMA Test Fest (November 2003) for Digital Rights Management version 1.0.

The report is compiled on behalf of OMA by The NCC Group.

The work and reporting has followed the OMA IOP processes and policies [OMAIOPPROC].

5. Test Details

5.1   Documentation

This chapter lists the details of the enabler and any documentation, tools or test suites used to prove the enabler.

Date:	November 2003
Location:	Seattle, USA
Enabler:	DRM v1.0
Process:	OMA Interoperability Policy and Process [OMAIOPPROC]
Type of Testing	Interoperability Testing
Products tested:	Client-to-server
Test Plan:	DRM Enabler Test Plan [ETP]
Test Specification:	DRM Enabler Test Specification [ETS]
Test Tool:	None
Test Code:	None
Type of Test event:	Test Fest
Participants:	Core Media, Nokia, Openwave, Beep Science, Panasonic, NEC
Number of Client Products:	6
Participating Technology Providers for clients:	Nokia (2), Openwave, Panasonic, NEC, 1 other
Number of Server Products:	4
Participating Technology Providers for servers:	Core Media, Beep Science, NEC, 1 other
Number of test sessions completed:	26

5.2   Test Case Statistics

5.2.1   Test Case Summary

This chapter gives an overview of the result for all test cases included in [ETS].

The following status is used in the tables below:

- Total number of TCs: Used in the summary to indicate how many test cases there are in total.

- Number of passed: Used in the summary to indicate how many of the total test cases that successfully has been passed.

- Number of failed: Used in the summary to indicate how many of the total test cases that has failed.

- Number of N/A: Used in the summary to indicate how many of the total test cases that has not be run due to that the implementation(s) do not support the functionality required to run this test case.

- Number of OT: Used in the summary to indicate how many of the total test cases that has not be run due to no time to run the test case.

- Number of INC: Used in the summary to indicate how many of the total test cases that has not been run due to that the functionality could not be tested due to an error in the implementation in another functionality that is required to run this test case.

Test Section:	Total number of TCs:	Number of Passed:	Number of Failed:	Number of N/A:	Number of OT:	Number of INC:
Client to Server TCs	30	196	10	434	68	72
Total	30	196	10	434	68	72

5.2.2 Test Case List

This chapter lists the statistics for all test cases included in [ETS].

The following status is used in the tables below:

- **No. of runs(R):** Used to indicate how many times the test cases have been run in total.

- **No. of passed(P):** Used to indicate how many times the specific test case has been successfully passed.

- **No. of failed(F):** Used to indicate how many times the specific test case has failed.

- **No. of OT(O):** Used in the summary to indicate how many of the total test cases that has not be run due to no time to run the test case.

- **No. of INC(I):** Used in the summary to indicate how many of the total test cases that has not been run due to that the functionality could not be tested due to an error in the implementation in another functionality that is required to run this test case.

- **PR:** Used to indicate if any PRs (Problem Reports) have been issued during testing.

- If the specific implementation due to e.g. no support for an optional feature has not run a specific test case the test case should be marked with N/A in the "No. of runs" column.

Test Case:	Test Case Description:	R	P	F	O	I	PR:	Note:
DRM-1.0-int-1	To test "Forward Lock" DRM functionality with "7-bit" encoding.	0	0	0	0	0	-	No Server Support
DRM-1.0-int-2	To test "Forward Lock" DRM functionality with "8-bit" encoding.	0	0	0	0	0	-	No Server Support
DRM-1.0-int-3	To test "Forward Lock" DRM functionality with "binary" encoding.	26	24	1	0	1	YES	Observation 012
DRM-1.0-int-4	To test "Forward Lock" DRM functionality with "base64" encoding.	22	13	3	0	6	-	
DRM-1.0-int-5	To test "Combined Delivery" functionality.	15	12	0	2	1	YES	Observation 012
DRM-1.0-int-6	To test the behaviour when the consuming device does not support "Combined Delivery" functionality.	12	10	0	0	2	-	
DRM-1.0-int-7	To test "Separate Delivery" functionality in case the DCF file indicates that the server intends to push the rights object separately. The DCF containing the content is not forward-locked.	11	4	0	3	4	-	

DRM-1.0-int-8	To test "Separate Delivery" functionality in case the DCF file indicates that the server intends to push the rights object separately. The DCF containing the content is forward-locked (i.e. wrapped inside a DRM message).	9	1	1	3	4	-
DRM-1.0-int-9	To test "Superdistribution" functionality. The protected content is sent from one consuming device to another. The rights object is obtained by opening a browsing session to the rights issuing service.	11	2	2	3	4	-
DRM-1.0-int-10	To test "Superdistribution" functionality in case of an unknown MIME type. The consuming device uses the Content-Type field to determine whether the content is suitable for it.	9	3	0	3	3	-
DRM-1.0-int-11	To test behaviour in the presence of several rights objects for one piece of content.	11	4	0	3	4	-
DRM-1.0-int-12	To test behaviour in the presence of several rights objects for one piece of content.	11	3	0	3	5	-
DRM-1.0-int-13	To test behaviour in the case there are unsupported headers in the *Headers* field.	9	2	0	3	4	-
DRM-1.0-int-14	To test <display> and <print> permissions for image files.	15	13	1	1	0	-
DRM-1.0-int-15	To test wrong permissions for image files.	13	11	0	1	1	-
DRM-1.0-int-16	To test an unknown permission for an image file.	9	2	0	1	6	-
DRM-1.0-int-17	To test <play> permission for a sound file.	15	10	0	2	3	-
DRM-1.0-int-18	To test wrong permissions for a sound file.	13	9	0	3	1	-
DRM-1.0-int-19	To test an unknown permission for a sound file.	9	2	0	2	5	-
DRM-1.0-int-20	To test <execute> permission for an application	11	6	0	2	3	-	Observation 009
DRM-1.0-int-21	To test wrong permissions for an application.	9	5	0	3	1	-	Observation 007

DRM-1.0-int-22	To test an unknown permission for an application.	6	2	0	2	2	-	Observation 007
DRM-1.0-int-23	To test <count> constraint for a media object file.	15	12	0	3	0	-	
DRM-1.0-int-24	To test erroneous <count> constraint for a media object file.	13	6	0	3	4	-	
DRM-1.0-int-25	To test <datetime> constraint for a media object file.	15	10	0	4	1	-	
DRM-1.0-int-26	To test erroneous <datetime> constraint for a media object file.	12	6	0	4	2	-	
DRM-1.0-int-27	To test <interval> constraint for a media object file.	15	11	0	4	0	-	
DRM-1.0-int-28	To test erroneous <interval> constraint for a media object file.	12	6	0	4	2	-	
DRM-1.0-int-29	To test the effect of having multiple constraints.	15	7	2	4	2	-	
DRM-1.0-int-30	To test Interval and Datetime constraints with a mobile that does not have a time source (i.e. a situation where the constraint is not understood and cannot be enforced).	3	0	0	2	1	-	Observation 008

5.2.3   Observations

The following issues were captured by the Trusted Zone during the OMA Test Fest.

5.2.3.1   EICS issues

This section details issues with the DRM v1.0 Enabler Implementation Conformance Statement (EICS) [DRMEICS].

Observation: 001	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)
Section	-
Comment:	From a test logistics perspective there is a potential difficulty in organising the testing schedule since there are no requirements upon the the Server, which means the EICS document applies only to the Client. It is therefore not possible to match Clients with Servers based on support of common functionality. Due to the relatively low number of participants at this Fest this was not an issue as all Clients tested against all Servers, but if numbers increase in future Fests it will be useful to have a means to determine which specification areas a Server claims to support so that they can be matched with Client products in a way that maximises the usefulness of testing.
Recommendation:	It should be investigated whether it is feasible to produce a high-level document which servers could use to indicate which specification areas they support.

Observation: 002	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)
Section	Section 5, Tables 3 and 4
Comment:	It is not clear whether the EICS document for DRM follows the definition laid down in the OMA IOP document. The minimum requirement for participation in the Fest iis defined by IOP to be support of all Mandatory SCR items. It is believed that the intention of the authors of the DRM EICS was that tables 3 and 4 should be optional depending on whether a Client supports DRM-GEN-C-002 and/or DRM-GEN-C-003. It is not clear whether the current EICS accurately reflects this intention. In particular, the Mandatory status of SCR items in Tables 3 and 4 seems to imply that all devices should support them. In order to comply with the IOP definition, it may be necessary to change the status of these SCR items to Optional, adding suitable requirements to items DRM-GEN-C-002 and -003 in order to form the correct SCR interdependencies. Note that for the pupuses of this Test Fest, EICS documents were reviewed with Tables 3 and 4 being treated as optional.
Recommendation:	EICS document should be reviewed against the IOP specification for SCR items to ensure that the intention of the authors is correctly represented.

Observation: 003	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)

Section	Section 5
Comment:	SCR item DRM-GEN-C-004 is currently marked as Optional. However, it comes as a requirement of item DRM-GEN-C-001, which is Mandatory. Therefore in effect item DRM-GEN-C-004 is Mandatory.
Recommendation:	SCR items DRM-GEN-C-001 and DRM-Gen-C-004 should be reviewed.

Observation: 004	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)
Section	Section 5
Comment:	Optional SCR item DRM-GEN-C-002 has as a requirement DRM-GEN-C-001, which is a Mandatory item. It is not clear why this relationship is required.
Recommendation:	SCR items DRM-GEN-C-001 and DRM-Gen-C-002 should be reviewed.

Observation: 005	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)
Section	Section 5
Comment:	Optional SCR items DRM-GEN-C-002 and DRM-GEN-C-003 have as a requirement DRM-GEN-C-001, which is a Mandatory item. It is not clear why these relationships are required.
Recommendation:	SCR items DRM-GEN-C-001, DRM-GEN-C-002 and DRM-GEN-C-003 should be reviewed.

Observation: 006	
Document:	DRM v1.0 Enabler Implementation Conformance Statement (EICS)
Section	Section 5
Comment:	Optional SCR item DRMREL-GEN-C-022 has as a requirement DRMREL-GEN-C-024, which is a Mandatory item. It is not clear why this relationship is required.
Recommendation:	SCR items DRMREL-GEN-C-022 and DRMREL-GEN-C-024 should be reviewed.

5.2.3.2 Enabler Test Suite (ETS) issues

This section details issues with the Enabler Test Specification for OMA DRM v1.0.

Observation: 007	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-21, DRM-1.0-int-22

Comment:	Test Cases refer to image media object, section header refers to Application.
Recommendation:	Test Case should be corrected.

Observation: 008	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-30
Comment:	All Client devices tested supported had a time source and therefore this test was not run.
Recommendation:	None.

Observation: 009	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-20
Comment:	Test requires sending of an application. In some cases the Server sends a JAD file instead of a download descriptor file. It was unclear whether this was valid behaviour.
Recommendation:	This area of the specification should be clarified.

Observation: 010	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	-
Comment:	An extra test was suggested, concerning the handling of the rights object when an attempt is made to copy a file which has an associated rights object. Copying should either not be allowed or the original rights object should apply to both copies (i.e. if the number of uses of a file is restricted, the count should decrease when either the original or the copy are opened).
Recommendation:	This area should be considered for test creation.

Observation: 011	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	-
Comment:	There are currently no tests for DRM encapsulated in MMS.
Recommendation:	This area should be considered for test creation.

Observation: 012	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-03, DRM-1.0-int-05
Comment:	A number of Inconclusive results were recorded for these tests due a Specification issue. During these tests the handset downloaded the content and formed derived encrypted content based on the downloaded file. The original content was subject to the rights policy delivered with it, but the derived encrypted content was not, e.g. the derived encrypted content could be forwarded even when the original content was subject to forward lock. The tester raised the point that the original file was not forwarded and therefore believed this to be within the rules laid down by the specification.
Recommendation:	This area of the specification should be clarified. Note: Observation 010 concerns a related issue.

DRM General Feedback	
Modification to Product Test Report	The role of the Trusted Zone is to record and correlate the results from the OMA Test Fest. The notes on the Product Test Report reflect the observations recorded on the Test Session Results form. It is the responsibilities of the test parties to perform sign off of the Test Session Results form during the Test Fest. Currently within the OMA IOP process, there is no procedure/process for review/modification of the Product Test report by The Trusted Zone, based on re-interpretation of results. For example, if a participant disputes a verdict assignment or wants to provide additional test evidence to annotate the Notes section this is currently outside of the Trusted Zone's mandate. Modification of this nature post-Fest will be second hand from only 1 of the 3 test parties, so the integrity of the notes cannot be verified. Note: The only modifications of the Product Test Report currently undertaken are editorial modifications for general typos and Product/Vendor information. OMA-IOP should determine whether Product Test reports can be annotated based upon additional post-Fest evidence of one or more of the test parties. Alternatively, participants should be clearly informed that the test evidence recorded on the Test Session results report will be reflected in the Product Test report and should endeavour to provide sufficient detail during the Test Fest.
Verdict Assignment	There was anecdotal evidence from Test Fest participants to uncertainty with respect to assigning Fail and Inconclusive verdicts. The following examples demonstrate this issue: 1. All test parties (Client A, Client B and Server) support the optional SCR feature and the test is applicable to be executed. If the Server did not function correctly, what verdict is assigned for Client A? 2. All test parties (Client A, Client B and Server) support the optional SCR feature and the test is applicable to be executed. If the Client B did not

	function correctly, what verdict is assigned for Client A?
	3. Only test parties Client A and Client B support the optional SCR feature. Client B does not support the feature so a duplicate of Client A is used to conduct testing, what verdict should be assigned for Client A/Server?
	4. During testing, an error occurs such that the criteria for the test verdict are not met. The test parties cannot determine the cause of the error, i.e. whether it is one of the implementations under test or a connectivity issue. What is the verdict of the test?
	5. Client A does not claim an optional SCR item in their EICS, so the Trusted Zone has marked the test case as N/A. During the Test Fest, the test case is executed correctly between the test parties and a Pass entered to overwrite the N/A. Is it permissible for the test parties to overwrite the pre-formatted test result?
	6. The test case requires reporting of an error when login is unsuccessful. An error was displayed but was not user friendly (e.g. "HTTP 409"). The verdict criteria are not specific about the error, does this constitute a pass?
	7. If a test case fails due to functionality not being supported by the client or the server. Should these be N/A or FAIL?
	One solution to this would be to provide within the FAQ a set of examples to provide clear guidelines for verdict assignment.
Connectivity Issues	There were a number of connectivity issues that caused difficulties in testing: • Due to an error in the registration page, some participants did not realise they would need to test with a handset that supported the US carrier network (1900/850). The network support provided at the Fest should be made clear on the registration page. • Testing had to be relocated after the first day as there were GPRS coverage problems in the room the testing was originally scheduled to use. The coverage within each test room should be thoroughly checked prior to the start of the Fest.

6. Confirmation

This signature states that the included information is true and valid.

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Stephen Higgins - DRM Trusted Zone

Appendix A.   Change History   (Informative)

Type of Change	Date	Section	Description