Enabler Test Report DRM v1.0

OMA Test Fest (March 2004)
Version 19-Mar-2004

Open Mobile Alliance
OMA-Enabler_Test_Report-DRM-v11-2004-03-19

Contents

1. Scope

This report describes the results from the testing carried out at OMA Test Fest (March 2004) 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 (March 2004) for Digital Rights Management version 1.0.

The report is compiled on behalf of OMA by 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:	March 2004
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:	Beep Science, Nokia, NDS, Openwave, NEC Corporation, Sony Ericsson Mobile Communications AB, LockStream, DMDsecure *3 additional vendors*
Number of Client Products:	9
Participating Technology Providers for clients:	Nokia (2 Clients), Openwave (2 Clients), Sony Ericsson Mobile Communications AB, LockStream, *3 additional clients*
Number of Server Products:	5
Participating Technology Providers for servers:	Beep Science, NDS, Openwave, NEC Corporation, DMDsecure
Number of test sessions completed:	38

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	451	34	407	152	36
Total	30	451	34	407	152	36

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.	6	6	0	0	0	-	
DRM-1.0-int-2	To test "Forward Lock" DRM functionality with "8-bit" encoding.	8	8	0	0	0	-	
DRM-1.0-int-3	To test "Forward Lock" DRM functionality with "binary" encoding.	36	34	0	2	0	-	
DRM-1.0-int-4	To test "Forward Lock" DRM functionality with "base64" encoding.	34	25	4	4	1	-	Observation 002
DRM-1.0-int-5	To test "Combined Delivery" functionality.	32	29	0	3	0	-	
DRM-1.0-int-6	To test the behaviour when the consuming device does not support "Combined Delivery" functionality.	5	4	0	1	0	-	Observation 003
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.	30	18	3	6	3	-	Observation 004

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).	18	7	2	6	3	-	Observation 004
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.	30	13	3	8	6	-	
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.	14	3	2	5	4	-	Observation 005
DRM-1.0-int-11	To test behaviour in the presence of several rights objects for one piece of content.	30	16	1	9	4	-	
DRM-1.0-int-12	To test behaviour in the presence of several rights objects for one piece of content.	30	16	1	9	4	-	
DRM-1.0-int-13	To test behaviour in the case there are unsupported headers in the *Headers* field.	15	5	0	8	2	-	
DRM-1.0-int-14	To test <display> and <print> permissions for image files.	32	27	0	5	0	-	
DRM-1.0-int-15	To test wrong permissions for image files.	32	26	0	6	0	-	
DRM-1.0-int-16	To test an unknown permission for an image file.	19	13	0	6	0	-	
DRM-1.0-int-17	To test <play> permission for a sound file.	27	22	1	3	1	-	
DRM-1.0-int-18	To test wrong permissions for a sound file.	27	23	0	4	0	-	
DRM-1.0-int-19	To test an unknown permission for a sound file.	16	12	0	4	0	-	
DRM-1.0-int-20	To test <execute> permission for an application	19	11	0	6	2	-	Observation 006

DRM-1.0-int-21	To test wrong permissions for an application.	19	10	1	7	1	-	Observation 006
DRM-1.0-int-22	To test an unknown permission for an application.	11	6	1	4	0	-	Observation 006
DRM-1.0-int-23	To test <count> constraint for a media object file.	32	27	0	5	0	-	
DRM-1.0-int-24	To test erroneous <count> constraint for a media object file.	19	9	4	6	0	-	
DRM-1.0-int-25	To test <datetime> constraint for a media object file.	31	21	2	6	2	-	
DRM-1.0-int-26	To test erroneous <datetime> constraint for a media object file.	18	8	2	7	1	-	Observation 007
DRM-1.0-int-27	To test <interval> constraint for a media object file.	32	24	1	7	0	-	
DRM-1.0-int-28	To test erroneous <interval> constraint for a media object file.	19	8	4	7	0	-	
DRM-1.0-int-29	To test the effect of having multiple constraints.	31	20	2	7	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).	1	0	0	1	0	-	

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	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 is 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 purposes 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. Note: This observation was raised at the previous Test Fest and this will be fixed in a future release of the EICS. This observation is included simply to indicate how the EICS documents were handled for Test Fest #5.

5.2.3.2 Enabler Test Suite (ETS) issues

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

Observation: 002	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-4
Comment:	Test requires sending of content using base64 encoding. Two participants at the Fest supported different base64 codecs which were incompatible. This meant that testing could not take place for this test.
Recommendation:	The preconditions for this test should be reviewed to examine whether an extra item is required to cater for this situation.

Observation: 003	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-6
Comment:	Test case description is “To test the behaviour when the consuming device does not support Combined Delivery functionality”. One of the referenced SCR items is DRM-GEN-C-002, which is called “Combined Delivery Method” and indicates support for Combined Delivery. Instead of this being a pre-requirement of the test, it should be a pre-requirement not to support this SCR item.
Recommendation:	Preconditions for the Test Case should be corrected.

Observation: 004	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-7, DRM-1.0-int-8
Comment:	Test is for separate delivery. Where Client and Server do not support this over a common delivery method this testing cannot take place. For example, if server supports SMPP only and Client supports PAP only this function cannot be tested. It may be worth canvassing registrants for this information to make sure they will be able to perform adequate testing to make it worthwhile attending a Fest. See also Observation 006.
Recommendation:	Registration process should be reviewed to determine whether this information should be requested from participants.

Observation: 005	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-10
Comment:	This test concerns Superdistribution. In order to run this test an extra client device is required. This other device must support different MIME types to that of the client under test. Currently no extra client is scheduled for this test. Often a second copy of the same client is available, but it is unlikely that this device will support different MIME types. Therefore this test has not been successfully run many times. Note that if the Trusted Zone is required to schedule a particular client to perform this role, further information about supported MIME types will need to be gathered during the registration process. Alternatively, testers should be made aware that they may be asked to participate in another test session for which their device is suited to this role.
Recommendation:	Advice on the best way to conduct this test should be given.

Observation: 006	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-20, DRM-1.0-int-21, DRM-1.0-int-22
Comment:	These tests require the sending of an application. Different Servers and Clients at the Fest supported different delivery mechanisms for different applications, e.g. MIDP for Java applications. This meant that some Client/Server pairings were unable to execute these test even though all the required SCR items were met because they did not share a common delivery mechanism. It is understood that the delivery method is out of scope of the DRM specification, but it would be helpful to the Trusted Zone in constructing the Test Session Reports if this information could be provided either in the EICS document or during the registration process. Without this information it is possible that attendees at the Fest may be unable to perform this test as they do not share a common delivery method. Also, a number of devices did not support applications at all and therefore could not run this test. It is not possible to tell this currently from the EICS document. It may be worth canvassing this information during the registration process.
Recommendation:	Registration process should be reviewed to determine whether this information should be requested from participants.

Observation: 007	
Document:	Enabler Test Specification for DRM 1.0 [ETS]
Section:	DRM-1.0-int-26
Comment:	This test is designed to test a Client response to an invalid <start> element. The correct format starts CCYY-MM-DD but the supplied test content has CCYYMMDD (no hyphens). One attending device has extra functionality to parse this second date format and deals with the content accordingly. It is not clear whether this is a correct implementation of the specification. The tester was of the opinion that the supplied test content was erroneous as a valid date could be inferred. They also believed that the specification does not explicitly state that rights should not be granted to a user if the start date is in an invalid format but can be interpreted as a valid date.
Recommendation:	The test case should be reviewed.

DRM General Feedback	
Connectivity Issues	There were a number of connectivity issues that caused difficulties in testing. All these were resolved by the end of the Fest but there was some impact on the number of sessions completed. It was suggested that more detailed information of the proposed connectivity methods at the Fest should be made available to participants prior to the Fest commencing, as this would give an opportunity to explore potential problems before coming on site. Problems experienced include: Instability of SMS Emulator Gateway.

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