

Test Module10.8

Encryption

Test Cases

*Author(s): imbus AG
MoReq2 test development team*

Date: 15/04/2008

Version: 1.0

Status: Approved

Customer: Serco Consulting



Contents

- Document History 3
- T10.8 Encryption* 4
 - T10.8.1 Configuration 5
 - T10.8.1.1 Configuration of the Ability to Remove Encryption During Import 5
 - T10.8.2 Metadata 6
 - T10.8.2.1 Keeping metadata with records 6
 - T10.8.2.2 Storage of Information Relating to Encryption 7
 - T10.8.3 Other 8
 - T10.8.3.1 Import/Capture of an Encrypted Record 8
 - T10.8.3.2 New Encryption Technologies 9
 - T10.8.3.3 Declaration 10
 - T10.8.3.4 Restricting Access 11

Document History

Version	Date of Issue	Author	Comment
0.1	04/07/07	Michael Sill	Initial Draft
0.2	21/08/07	Michael Sill	Revision after internal Review
0.3	06/02/08	Claudia Schieber	Revision after final draft
0.4	29/02/2008	Claudia Schieber	Revised after publishing of the final draft of the MoReq2 specification
1.0	02/04/2008	MoReq2 test development team	Finalising after approval of the test framework

T10.8 Encryption

REMARKS	TEST DATA:	The test data for the following tests (test module 10, chapter T10.8) can be found in the corresponding test data repository. The reference chapter is called ' on chapter T10.8 – Encryption '.
	TEST EXECUTION:	<p>step (1) Please read the chapter Testframework – Introduction/Chapter 2 before starting the test execution.</p> <p>step (2) The test cases are designed in a way that enables you to skip certain test cases when required. However, the outcome of some test cases might be a precondition of subsequent tests. Where there are dependencies we have inserted test references into the precondition section of the test case. Careful attention should be given to the preconditions of the test cases.</p>

T10.8.1 Configuration

Abstract: This chapter focuses on testing the configuration possibilities for ERMS supporting encryption mechanisms.

T10.8.1.1 Configuration of the Ability to Remove Encryption During Import

I. Global test case information		
<i>test case id:</i>	T10.8.1.1	
<i>test case priority:</i>	<input type="checkbox"/> Mandatory <input checked="" type="checkbox"/> Optional <input type="checkbox"/> Not Testable	
<i>test case description:</i>	An administrative role is logged in at configuration time or later. Ensure that this role can configure the ERMS to allow the removal of encryption during the import/capture of an encrypted record.	
<i>Req.-ID:</i>	10.8.5	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> Logged in as role CentralAdministrator 		
<i>b. test steps</i>		
step	action/operation	check/ expected result
1.	Configure the ERMS so that the encryption of a record can be removed when a record is captured.	The ERMS can be configured to allow the removal of the encryption of a record when a record is captured.
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> The ERMS allows an administrative role to configure the ERMS to allow the removal of the encryption of a record when an encrypted record is captured. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed <input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature

T10.8.2 Metadata

Abstract: This chapter focuses on testing how metadata are stored and kept in systems supporting encryption.

T10.8.2.1 Keeping metadata with records

I. Global test case information		
<i>test case id:</i>	T10.8.2.1	
<i>test case priority:</i>	<input type="checkbox"/> Mandatory	<input checked="" type="checkbox"/> Optional
<i>test case description:</i>	Ensure that the ERMS is able to keep metadata with transmitted encrypted records.	
<i>Req.-ID:</i>	10.8.3	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> A software application with encrypting capability is interfaced TestClassificationScheme1 is created The record Record2 (CS01/001/001/002) is transmitted in encrypted form by a software application that interfaces with the ERMS Logged in as role CentralAdministrator 		
<i>b. test steps</i>		
step	action/operation	check/ expected result
1.	Check the metadata of the record Record2 (CS01/001/001/002) .	The ERMS keeps among others the following metadata values: <ul style="list-style-type: none"> the fact of encrypted transmission the serial number of an electronic certificate (where appropriate) the type of algorithm the level of encryption used the date and time of the encryption/decryption process
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> The ERMS is able to keep metadata of transmitted encrypted records. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed
		<input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature

T10.8.2.2 Storage of Information Relating to Encryption

I. Global test case information		
<i>test case id:</i>	T10.8.2.2	
<i>test case priority:</i>	<input checked="" type="checkbox"/> Mandatory	<input type="checkbox"/> Optional <input type="checkbox"/> Not Testable
<i>test case description:</i>	A user role captures an encrypted record. Ensure that the ERMS captures and stores information relating to encryption and details of related verification agencies.	
<i>Req.-ID:</i>	10.8.2	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> • TestClassificationScheme1 is created • Logged in as role DecryptionKeyOwner 		
<i>b. test steps</i>		
<i>step</i>	<i>action/operation</i>	<i>check/ expected result</i>
1.	Capture the record Record5 in the file Shortterm Planning (CS01/001/002/001) .	The record Record5 (CS01/001/002/001/003) is captured.
2.	Check the metadata information of Record5 (CS01/001/002/001/003) .	The ERMS stored information relating to encryption and details of related verification agencies.
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> • The ERMS is able to capture and store, at the time of record capture, information relating to encryption and details of related verification agencies. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed
		<input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature

T10.8.3 Other

Abstract: This chapter focuses on testing various aspects of ERMS supporting encryption that have not been tested in previous chapters.

T10.8.3.1 Import/Capture of an Encrypted Record

I. Global test case information		
<i>test case id:</i>	T10.8.3.1	
<i>test case priority:</i>	<input type="checkbox"/> Mandatory	<input checked="" type="checkbox"/> Optional
<i>test case description:</i>	The ERMS is configured in a way that an encryption of a record is removed during the import/capture. An administrative role imports/captures an encrypted record. Ensure that the ERMS removes the encryption.	
<i>Req.-ID:</i>	10.8.5	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> The ability to remove encryption during the import/capture is configured (see test case T10.8.1.1) Logged in as role User2 TestClassificationScheme1 is created 		
<i>b. test steps</i>		
step	action/operation	check/ expected result
1.	Import the record Record3 in the file Shortterm Planning (CS01/001/002/001) .	The record Record3 (CS01/001/002/001/001) is imported. The encryption of the record Record3 is removed.
2.	Capture the record Record4 in the file Shortterm Planning (CS01/001/002/001) .	The record Record4 (CS01/001/002/001/002) is captured. The encryption of the record Record4 is removed.
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> The ERMS allows to remove the encryption of a record during import or capture. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed
		<input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature

T10.8.3.2 New Encryption Technologies

I. Global test case information		
<i>test case id:</i>	T10.8.3.2	
<i>test case priority:</i>	<input type="checkbox"/> Mandatory	<input type="checkbox"/> Optional <input checked="" type="checkbox"/> Not Testable
<i>test case description:</i>	The corresponding requirements cannot be tested.	
<i>Req.-ID:</i>	10.8.6	
II. Test case		
<i>a. precondition(s)</i>		
•		
<i>b. test steps</i>		
<i>step</i>	<i>action/operation</i>	<i>check/ expected result</i>
1.		
<i>c. postcondition(s)</i>		
•		
III. Test result		
<i>defects / deviations</i>	<i>verdict</i>	
	<input type="checkbox"/> passed	
	<input type="checkbox"/> failed	
<i>remarks</i>	<i>tester</i>	
	_____ date, signature	

T10.8.3.3 Declaration

I. Global test case information		
<i>test case id:</i>	T10.8.3.3	
<i>test case priority:</i>	<input type="checkbox"/> Mandatory	<input checked="" type="checkbox"/> Optional
<i>test case description:</i>	Ensure that a user role can declare a record directly from the software application which has an encrypting capability.	
<i>Req.-ID:</i>	10.8.4	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> A software application with encrypting capability is established (e.g. Winzip) Logged in as role Worker TestClassificationScheme1 is created 		
<i>b. test steps</i>		
step	action/operation	check/ expected result
1.	Open the software application (with encrypting capability).	The software is open.
2.	Encrypt document Document1 (D01) .	The document Document1 (D01) is encrypted.
3.	Capture the encrypted document Document1 (D01) as Record6 into the file Shortterm Planning (CS01/001/002/001) of the ERMS.	The encrypted document Document1 (D01) is captured as Record6 (CS001/002/001/004) without having to switch to the ERMS.
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> The ERMS allows to declare an encrypted document as a record directly from the software application which has an encrypting capability. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed
		<input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature

T10.8.3.4 Restricting Access

I. Global test case information		
<i>test case id:</i>	T10.8.3.4	
<i>test case priority:</i>	<input checked="" type="checkbox"/> Mandatory	<input type="checkbox"/> Optional <input type="checkbox"/> Not Testable
<i>test case description:</i>	A unauthorised user tries to access an encrypted record. Ensure that the ERMS denies access to that record. Afterwards an authorised user accesses the encrypted record. Ensure that he is able to access the encrypted record.	
<i>Req.-ID:</i>	10.8.1	
II. Test case		
<i>a. precondition(s)</i>		
<ul style="list-style-type: none"> • A software application with encrypting capability is interfaced • TestClassificationScheme1 is created • The record Record1 (CS01/001/001/001) is received • User2 is listed as a holder of a relevant decryption key • User3 is not listed as a holder of a relevant decryption key • Logged in as User3 		
<i>b. test steps</i>		
step	action/operation	check/ expected result
1.	Attempt to access the record Record1 (CS01/001/001/001) .	The ERMS denies access to the record Record1 (CS01/001/001/001) .
2.	Log off as User3 .	User3 is logged off.
3.	Log in as User2 .	User2 is logged in.
4.	Access the record Record1 (CS01/001/001/001) .	The record Record1 (CS01/001/001/001) is accessed.
<i>c. postcondition(s)</i>		
<ul style="list-style-type: none"> • The ERMS denies the access for unauthorised users to the encrypted records. • An authorised user is able to access encrypted records. 		
III. Test result		
<i>defects / deviations</i>		<i>verdict</i>
		<input type="checkbox"/> passed
		<input type="checkbox"/> failed
<i>remarks</i>		<i>tester</i>
		_____ date, signature