

ENGLISH TRANSLATION

DEDICATED SHORT-RANGE COMMUNICATION (DSRC) BASIC APPLICATION INTERFACE TEST ITEMS AND CONDITIONS FOR LAND MOBILE STATION COMPATIBILITY CONFIRMATION

ARIB TECHNICAL REPORT

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Foreword

The Association of Radio Industries and Business (ARIB) has been investigating and summarizing the basic technical requirements for establishing standards and technical reports with the participation of the various radio equipment manufacturers, telecommunications companies, broadcasters, and users.

The technical report contained herein will serve as private-sector guideline for the measurement methods and testing methods, etc., in order to ensure the quality and compatibility of radio facilities and equipment for private use based on the publicly established technical standards and private-sector voluntary standards in Japan.

These technical reports are being established principally to define the test items and conditions for Land Mobile Station compatibility confirmation for the "Dedicated Short-Range Communication System Basic Application Interface." In order to ensure fairness and openness among all parties involved, during drafting stages, we invite radio equipment manufacturers, operators, testing organizations and users both domestically and overseas to participate openly in the activities of the Standard Assembly so as to develop technical reports with the total agreement of all parties involved.

The scope of application of these technical reports covers the minimum requirements for the fundamental items that assure compatibility of Land Mobile Stations with the Base Stations based on Dedicated Short-Range Communication System Basic Application Interface. On the application of this technical report, the test organizations related to operators and radio equipment manufacturers, etc., should use them together with practical guidelines for operators in developing original specifications and systems that fall within the scope of the standards.

We hope that this technical report will aid all parties involved, including radio equipment manufacturers, operators, users, testing organizations and others.

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Chapter 1 General Items

1.1 Overview

Testing in the context of this Technical Report is positioned as the testing and suitability check of a Land Mobile Station in which a DEDICATED SHORT-RANGE COMMUNICATION (DSRC) Basic Application Interface according to the "DEDICATED SHORT-RANGE COMMUNICATION (DSRC) Basic Application Interface Standard" (ARIB STD-T110) is installed (hereafter "Land Mobile Station"). Testing is to be carried out within the scope of basic functions and standardized options defined in the ARIB STD-T110 "DEDICATED SHORT-RANGE COMMUNICATION (DSRC) Basic Application Interface Standard" (ARIB STD-T110). Testing is done under the assumption that the behavior of equipment according to the DEDICATED SHORT-RANGE COMMUNICATION (DSRC) SYSTEM Standard (ARIB STD-T75) and "DEDICATED SHORT-RANGE COMMUNICATION (DSRC) APPLICATION SUB-LAYER Standard" (ARIB STD-T88), and "DEDICATED SHORT-RANGE COMMUNICATION (DSRC) Basic Application Interface Standard" (ARIB std) (ARIB STD-T110) is fully confirmed under the responsibility of the Land Mobile Station manufacturer during the development or manufacturing process.

The testing procedures described in this document are designed to be able to be performed in a general testing environment, so that no special demands are placed on the testing entity or the manufacturer with regard to environmental conditions or special functions of the Land Mobile Station.

1.2 Test Classification

When performing testing for compatibility confirmation according to this Technical Report, the Land Mobile Station of the DSRC system under test must in principle fulfill the items and conditions specified in the following technical reports.

- 1) DEDICATED SHORT-RANGE COMMUNICATION (DSRC) SYSTEM TEST ITEMS AND CONDITIONS FOR LAND MOBILE STATION COMPATIBILITY CONFIRMATION
 - ARIB TR-T16, Latest Version
- 2) TEST ITEMS AND CONDITIONS FOR DEDICATED SHORT-RANGE COMMUNICATION (DSRC) APPLICATION SUB-LAYER LAND MOBILE STATION COMPATIBILITY CONFIRMATION, ARIB TR-T17, Latest Version

Testing according to this Technical Report assumes the DSRC basic application interface test to be a static test performed in a standardized communication environment. The main party that will perform the testing is the Land Mobile Station manufacturer.

By successfully testing the items in the above two technical reports as well as the items described in this Technical Report, the Land Mobile Station of the DSRC system is considered as having been confirmed capable of standard operation.

However, because the tests specified in this Technical Report involve evaluation in a standardized communication environment, it should be kept in mind that conditions in an actual communication environment may differ.

Chapter 2 Configuration for Interoperability Test

2.1 Purpose of Test

The interoperability test system serves for verifying that the Land Mobile Station as manufactured by the Land Mobile Station manufacturer is compliant with the DEDICATED SHORT-RANGE COMMUNICATION (DSRC) Basic Application Interface Standard" (ARIB STD-T110).

2.2 Test Configuration

The interoperability test system is generally called a base station simulator. In this technical report, details such as equipment models used for the testing system are not specified. Rather the system is defined as any testing system that can perform the stipulated functions.

The interoperability test system comprises a test program for testing interoperability of Land Mobile Stations.

As the connection method between the interoperability test system and the Land Mobile Station under test, the following two methods are considered.

(1) Connection is made by RF coupling or by cable in a shield room or shield box. An example of a testing system with such a configuration is shown in Fig. 2.2-1.

(2) Land Mobile Station under test and testing system are arbitrarily connected by RF coupling. In this case, both of them are equipment in a Dedicated Short-Range Communication System as specified in Article 4-3 of the Radio Law and Article 6-4-7 of the Radio Facility Regulation, both requiring the Technical Standards Conformity Certification. An example of a testing system with such a configuration is shown in Figure 2.2-2.

Regarding the methods of installation and operation of the test system and the Land Mobile Station under test, the Installation and Operational Standard in Annex Q of the ARIB STD-T75 DEDICATED SHORT-RANGE COMMUNICATION (DSRC) SYSTEM standard shall be strictly followed, and consideration shall be given to ensure that no interference and disturbance of other communications occurs.

Each of the two methods of connection mentioned above may be used selectively according to the details of the test.

In the remainder of this document, the Land Mobile Station shall be referred to as OBE (On Board Equipment) and the interoperability test system as TS (Test System).



Figure 2.2-1 Test configuration example 1



In installation and operation, consideration shall be given to ensure that no interference and disturbance of other communications occurs.



Chapter 3 interoperability testing

3.1 Test Items and Test Conditions

3.1.1 Test Items

Test items are described as to the operation test and performance test for each function.

For the performance test, only a method of measurement to obtain criteria for numerical value evaluations is described. Conformance of numerical values obtained with this method is not defined.

When there are separate requirements for a given service, performance should be evaluated in accordance with this method of measurement.

3.1.2 Test Items for OBE Instruction Response Application

The items for tests related to the OBE instruction response application to be performed with the TS are listed below.

Test number	Test item
1-1-1	Check communication result notification (normal end, no charge)
1-1-2	Check communication result notification (abnormal end)
1-1-3	Check communication result notification (normal end, with charge)
1-2-1	Check time notification
1-3-1	Check response (when "YES" button is pressed)
1-3-2	Check response (when "NO" button is pressed)
1-3-3	Check response (when no button is pressed)
1-3-4	Check response (when no button interface is present)

3.1.3 Test Items for OBE Memory Access Application

The items for tests related to the OBE memory access application to be performed with the TS are listed below.

Test number	Test item			
2-1-1	Check memory resource information acquiry processing			
2-1-2	Check memory read processing			
2-1-3	Check memory write processing			
2-1-4	Check bulk memory read processing			
2-1-5	Check bulk memory write processing			
2-2-1	Check nonvolatile memory write processing (option)			
2-3-1	Check memory read processing (no memory tag)			
2-3-2	Check memory read processing (protection mode violation)			
2-3-3	Check memory read processing (invalid command)			
2-3-4	Check memory read processing (write size exceeded)			
2-3-5	Check memory read processing (SPF violation)			
2-3-6	Check bulk memory read processing (maximum tag number			
	exceeded)			
2-4-1	Check memory verification processing (option)			
2-4-2	Check memory release processing (option)			
2-5-1	Check password protected memory verification processing (option)			
2-5-2	Check password protected memory release processing (option)			
2-5-3	Check password protected memory read processing (option)			
2-5-4	Check password protected memory write processing (option)			
2-5-5	Check password protected bulk memory read processing (option)			
2-5-6	Check password protected bulk memory write processing (option)			
2-6-1	Check memory allocation processing (not enough free memory)			
2-6-2	Check password protected memory read processing (password			
	mismatch)			

3.1.4 Test Items for IC Card Memory Access Application

The items for tests related to the IC card access application to be performed with the TS are listed below.

Test number	Test item
3-1-1	Check application start request
3-1-2	Check application end request
3-2-1	Check IC card read processing
3-2-2	Check IC card read access time
3-3-1	Check IC card write processing
3-3-2	Check IC card write access time
3-4-1	Check IC card reverse insertion error processing
3-5-1	Check certification information acquiry processing (with certification) Note: Selective item depending on implementation
3-5-2	Check certification information acquiry processing (no certification) Note: Selective item depending on implementation

3.1.5 Test Items for Push-Type Information Delivery Application

The items for tests related to the push-type information delivery application to be performed with the TS are listed below.

Test number	Test item				
4-1-1	Check initial connection operation				
4-2-1	Check push communication with no confirmation response (individual communication)				
4-2-2	Check push communication with no confirmation response (broadcast communication)				
4-2-3	Check push communication with confirmation response (response timing switch-over)				
4-2-4	Check push communication with confirmation response (same response timing repeat)				
4-2-5	Check segment/transfer communication				
4-2-6	Check push operation discard communication				
4-2-7	Check re-execute request				
4-3-1	Check simulated push (option)				

3.1.6 Test Items for OBE ID Communication Application

The items for tests related to the OBE ID communication application to be performed with the TS are listed below.

Test number	Test item		
5-1-1	Check OBE ID registration processing		
5-1-2	Check OBE ID check processing		
5-1-3	Check OBE ID delete processing (normal operation)		
5-1-4	Check OBE ID delete processing (error operation)		
5-1-5	Check OBE ID condition change (at OBE)		
5-2-1	Check OBE ID acquiry processing (normal operation)		
5-2-2-1	Check OBE ID acquiry processing (error operation 1)		
5-2-2-2	Check OBE ID acquiry processing (error operation 2)		

3.1.7 Test Items for OBE Basic Indication Response Application

The items for tests related to the OBE basic indication application to be performed with the TS are listed below.

Test number	Test item
6-1-1	Check communication result notification (normal end)
6-1-2	Check communication result notification (abnormal end)
6-1-3	Check communication result and charge notification
6-2-1	Check time notification

3.2 Test Parameters

3.2.1 Interoperability Test Parameters Related to Basic Application Interface

The parameters to be set or registered for testing the basic application interface are as follows. These parameters are applied unless otherwise specified.

The indications $\langle TS \rangle$, $\langle OBE \rangle$, and $\langle Common \rangle$ have the following meaning.

<TS>: Parameter set or registered by TS

<OBE>: Parameter set or registered by OBE

<Common>: Parameter set or registered in both TS and OBE

3.2.2 DSRC Related Parameters

3.2.2.1 Layer 1 Parameters

- Frequency used: Select from D1, D2, D3, D4, D5, D6, D7 <TS>
- Communication profile indicates whether ASK or $\pi/4$ shift QPSK defined by communication standard ARIB STD-T75 is used <OBE>

3.2.2.2 Layer 2 Parameters

- Frame class: A or B or C <TS>
- Communication mode: Half duplex communication <TS>
- Communication zone: Standalone <TS>
- Transmitter/receiver identifier TRI: None <TS>
- Time sharing: None <TS>
- Communication area: Class 1 <TS>
- LLC: Type 1 procedure only <Common>
- Link request status identifier ACPI: Authorized <TS>
- Congestion information STA: 100 to 50% <TS>
- Release timer: 0.2 seconds fixed, valid identifier: always valid <TS>
- NRQmax: 127 <OBE>
- Link request limit frequency: RT1=1, RT2, RT3=4, RT4=4 < OBE>
- Priority assignment: Not conducted <Common>
- Scramble: Yes <Common>

3.2.2.3 Layer 7 Parameters

- Concatenation: None <Common>
- Connection procedure: Standard connection <TS>
- EID: Elective number from 4 to 127 <OBE>; 3 in broadcast mode
- FID: 1 <TS>
- PDU number of PDU header: Selective number from 2 to 15 <Common>
- Communication profile: Declared communication profile is selected. <Common>

3.2.3 DSRC Application Sub Layer (DSRC-ASL) Related Parameters

3.2.3.1 ELCP Parameters

- AID: 18 (Multi-purpose information system) <Common>
- ASL base station profile <TS>
- Version information: 0
- Connection management timer: To be set by TS
- ASL-ELCP function identification information: Expanded function according to

details of test

- ASL-NCP identification information: Included in localPortControl[1]
- ASL Land Mobile Station profile <OBE>
- Version information: 0
- Land Mobile Station identification information: Specified by OBE
- ASL-ELCP function identification information: Identifier indicating implemented

expanded functions

 ASL-NCP identification information: Identifier indicating implemented ASL-NCP (to be included in localPortControl[1])

3.2.3.2 LPCP Parameters

- Access point identifier: 1 <Common>
- List of reception enabled ports: Numbers of reception enabled ports for implemented applications <OBE>

3.3.3.3 LPP Parameters

- Resend function (sender side): Values below indicated at implementation <Common>
- Resend timer timeout value: Set at TS and OBE
- Max. number of resend tries: Set at TS and OBE

TID: Use 0x0000–0x7FFF for Invoke.req at OBE and 0x8000–0xFFFF for Invoke.req at TS

3.2.4 Basic Application Interface Related Parameters

3.2.4.1 Parameters Common to All Basic Applications

- Enable/disable LPP resend function when sending: Set at TS and OBE <Common>
- LPP initial connection procedure: Normal initial connection procedure of application ${\rm <TS>}$

3.2.4.2 OBE Instruction Response Application Related Parameters

- Send source and send target port number: 0x0C09 <Common>
- Check input method available: Declare at time of testing <OBE>

3.2.4.3 OBE memory Access Application Related Parameters

- Send source and send target port number: 0x0C18 <Common>
- LPP ResultTimeout: Set at TS <TS>
- Max. size of operation data when receiving or sending (opCommandBody of OperationCommand): Declare at time of testing <OBE>
- Password function: Declare implementation status at time of testing <OBE>
- Memory allocation/release function: Declare implementation status at time of testing <OBE>

3.2.4.4 IC card Access Application Related Parameters

- Send source and send target port number
 - If access application for contact-based IC card: 0x0C10 <Common>
 - If access application for contactless IC card: 0x0C11 <Common>
- EMV certification enable/disable: Declare at time of testing <OBE>

3.2.4.5 Push-Type Information Delivery Application Related Parameters

- Send source and send target port number: 0x0C0A <Common>
- LPP ResultTimeout: Set at TS <TS>
- ClientInformation command for notification of client information: Declare at time of testing <OBE>

3.2.4.6 OBE ID Communication Application Related Parameters

• Send source and send target port number: 0x0C00 <Common>

3.2.4.7 OBE Basic Indication Application Related Parameters

• Send source and send target port number: 0x0C08 <Common>

3.3 Test Details

The steps for testing the interoperability of Land Mobile Radio Stations with the Dedicated Short-Range Communication (DSRC) basic application interface are described below.

3.3.1 Test Procedure for OBE Instruction Response Application

The items for tests related to the OBE instruction response application to be performed with the TS are listed below.

The items are listed separately as test numbers 1-3-1 to 1-3-4, depending on whether the OBE is equipped with buttons, voice recognition, etc. Select the appropriate items accordingly.

- OBE with integrated response input facility: 1-3-1, 1-3-2, 1-3-3
- OBE with response input facility separate from main unit: 1-3-1, 1-3-2, 1-3-3, 1-3-4
- OBE without response input facility: 1-3-4

Table 3-1 OBE instruction response operation test—Communication result notification (normal end, no charge)

Test number	1-1-1	Item name	OBE instruction response operation Check communication result notification (normal end, no charge)	
Test ov	erview			
Check of	communic	ation resu	lt notification operation.	
Test con	nditions			
• Basic	paramete	rs as liste	d in section 3.2.	
• DSRC	-LPCP/LI	PP must o	perate normally.	
• DSRC	connecti	on process	sing must be completed, and communication connection state	
must	have been	establish	ed.	
Local p	ort numbe	er informa	tion for OBE instruction response application must have been	
exchange	d.			
Test pro	ocedure			
1. As OBE instruction information, TS sends OBE indication notification command				
"indicationRequest" including "transactionResult(0)" to OBE.				
2. OBE sends OBE indication response command "indicationResponse" as response to OBE				
instru	iction info	rmation.		
Confirm	nation iter	ns		
• Verify	• Verify that "transactionResult" at OBE is (0), "Service normal end, no charge."			
		-		

· Verify that TS receives OBE indication response command "indicationResponse."

Table 3-2 OBE instruction response operation test—Communication result notification (abnormal end)

Test		Item	OBE instruction response operation		
number	1-1-2	name	Check communication result notification (abnormal end)		
Test ove	erview				
• Check	communio	cation res	ult notification operation.		
Test con	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
• DSRC	connectio	n process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for OBE instruction response application must have been		
excha	exchanged.				
Test pro	ocedure				
1. As OBE instruction information, TS sends OBE indication notification command					
"indicationRequest" including "transactionResult(64)" to OBE.					
2. OBE sends OBE indication response command "indicationResponse" as response to OBE					
instruction information.					
Confirmation items					
• Verify	• Verify that "transactionResult" at OBE is (64), "Service abnormal end."				
• Verify	Verify that TS receives OBE indication response command "indicationResponse."				

Table 3-3 OBE instruction response operation test—Communication result notification (normal end, with charge)

Teat		Itom	OBE instruction response operation		
1-1-3	1-1-3	Item	Check communication result notification (normal end, with		
number		name	charge)		
Test ov	erview				
• Check	commun	ication re	sult notification operation and charge notification operation.		
Test con	nditions				
• Basic	paramete	rs as liste	d in section 3.2.		
• DSRC	C-LPCP/LI	PP must o	perate normally.		
• DSRC	connecti	on proces	sing must be completed, and communication connection state		
must	have been	establish	led.		
• Local	port nun	nber infor	mation for OBE instruction response application must have		
been e	exchanged	l.			
• For th	ne operatio	on test, us	e the following data as "amount" parameter value.		
	Test data 1: any amount information [3 bytes]				
Test pr	ocedure				
1. As OBE instruction information, TS sends OBE indication notification command					
"indicationRequest" including "transactionResult(128), amount (test data 1)" to OBE.					
2. OBE sends OBE indication response command "indicationResponse" as response to OBE					
instruction information.					
Confirm	nation iter	ms			
• Verify	• Verify that "transactionResult" at OBE is (128), "Service normal end, with charge," and				
that "	that "amount" value matches test data 1.				
• Verify	• Verify that TS receives OBE indication response command "indicationResponse."				

Table 3-4 OBE instruction response operation test—Time notification

Test	1.0.1	Item	OBE instruction response operation		
number	1-2-1	name	Check time notification		
Test ove	erview	1			
• Check	time notif	ication o	peration.		
Test con	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
• DSRC	connectio	n process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for OBE instruction response application must have been		
excha	exchanged.				
• For the operation test, use the following data as "time" parameter value.					
Test data 1: any time information [4 bytes]					
Test procedure					
1. As OBE instruction information, TS sends OBE indication notification command					
"indicationRequest" including "transactionResult(0), time (test data 1)" to OBE.					
2. OBE sends OBE indication response command "indicationResponse" as response to OBE					
instruction information.					
Confirmation items					
• Verify that "transactionResult" at OBE is (0), "Service normal end, no charge," and that					
"time'	"time" value matches test data 1.				
• Verify	Verify that TS receives OBE indication response command "indicationResponse."				

Table 3-5 OBE instruction r	esponse operation tes	t—Response check ('	"YES" button pressed)
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Test		Item	OBE instruction response operation	
number	1-3-1	name	Check response (when "YES" button is pressed)	
Test overview				
Check	OBE inst	truction re	esponse operation.	
Test co	nditions			
· Basic	naramoto	re ae lieta	d in soction 3.2	
	paramete	nuipped w	ith button interface	
		Juippeu w		
• DSRC	-LPUP/LF	P must o	berate normally.	
• DSRC	connectio	on process	sing must be completed, and communication connection state	
must	have been	establish	ed.	
• Local	port nun	nber infor	mation for OBE instruction response application must have	
been e	exchanged	l.		
• For th	ne operati	on test, u	se the following data as the number of seconds value for the	
OBE	confirmati	on reques	t command "confirmationRequest."	
	Test da	ata 1: any	number of seconds [1 byte]	
Test pro	ocedure			
1. As C	BE respo	onse confi	rmation information, TS sends OBE confirmation request	
comn	nand "conf	firmationF	Request" including test data 1 to OBE.	
2. At O	BE, confii	rmation b	utton (YES) is pressed within time interval specified by test	
data	1.			
OBE	sends OB	E confirm	ation response command "confirmationResponse" as response	
to OBE re	esponse co	nfirmatio	n information.	
Confirm	nation iter	ms		
• Verify	• Verify that TS receives OBE confirmation response command "confirmationResponse,"			
and th	and that content is (1).			

Table 3-6 OBE instruction response operation test—Response check ("NO" button pressed)

Test	1 9 9	Item	OBE instruction response operation		
number	1-9-7	name	Check response (when "NO" button is pressed)		
Test ov	erview	·			
· Check	x OBE inst	ruction re	esponse operation.		
Test co	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
· OBE	must be eq	uipped w	ith button interface.		
· DSRC	C-LPCP/LP	P must og	perate normally.		
· DSRC	C connectio	n proces	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for OBE instruction response application must have been		
excha	nged.				
• For th	ne operation	n test, us	e the following data as the number of seconds value for the OBE		
confir	mation req	uest com	mand "confirmationRequest."		
	Test data 1: any number of seconds [1 byte]				
Test pr	Test procedure				
1. As O	1. As OBE response checking information, TS sends OBE confirmation request command				
"confi	rmationRe	quest" in	cluding test data 1 to OBE.		
2. At OI	OBE, confirmation button (NO) is pressed within time interval specified by test data				
1.					
3. OBE	OBE sends OBE confirmation response command "confirmationResponse" as response to				
OBE	OBE response confirmation information.				
Confirm	nation iten	ıs			
• Verify	· Verify that TS receives OBE confirmation response command "confirmationResponse,"				
and the	and that content is (2).				

Table 3-7 OBE instruction response operation test—Response check (no button pressed)

Test	1.0.0	Item	OBE instruction response operation	
number	1-3-3	name	Check response (when no button is pressed)	
Test ove	erview			
• Check	OBE inst	ruction re	esponse operation.	
Test cor	nditions			
• Basic	paramete	rs as liste	d in section 3.2.	
• OBE 1	nust be eo	quipped w	ith button interface.	
• DSRC	-LPCP/LE	PP must of	perate normally.	
• DSRC	connectio	on process	sing must be completed, and communication connection state	
must	have been	establish	ed.	
• Local	port num	ber infor	mation for OBE instruction response application must have	
been e	exchanged			
• For th	ne operati	on test, u	se the following data as the number of seconds value for the	
OBE o	OBE confirmation request command "confirmationRequest."			
Test data 11: any number of seconds [1 byte]				
Test pro	Test procedure			
1. As OF	BE respon	se checkir	ng information, TS sends OBE confirmation request command	
"confi	rmationRe	equest" in	cluding test data 11 to OBE.	
2. At OB	E, no but	ton is pres	sed within time interval specified by test data 1.	
3. OBE	sends OB	E confirm	ation response command "confirmationResponse" as response	
to OB	to OBE response confirmation information.			
Confirm	nation iter	ns		
Verify	Verify that TS receives OBE confirmation response command "confirmationResponse"			
within the number of seconds specified by test data 1, and that content is (0).				

Table 3-8 OBE instruction response operation test—Response check (no button interface)

Test		Itom	OBF instruction response operation		
Test	1-3-4	Item			
number		name	Check response (when no button interface is present)		
Test ove	erview				
• Check	OBE inst	ruction re	esponse operation.		
Test cor	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• OBE 1	must not be	e equippe	d with button interface.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
• DSRC	connectio	n process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for OBE instruction response application must have been		
excha	nged.				
• For th	e operation	n test, us	e the following data as the number of seconds value for the OBE		
confir	confirmation request command "confirmationRequest."				
	Test data 1: any number of seconds [1 byte]				
Test pro	ocedure				
1. As Of	BE respons	e checkii	ng information, TS sends OBE confirmation request command		
"confi	rmationRe	quest" in	cluding test data 1 to OBE.		
2. OBE	sends OBE	E denial	response command "OBEDenialResponse" as response to OBE		
respo	response confirmation information.				
Confirm	nation item	ns			
• Verify	• Verify that TS receives OBE denial response command "OBEDenialResponse," and that				
status	status is (1).				

3.3.2 Test Items for OBE Memory Access Application

The items for tests related to the OBE memory access application to be performed with the TS are listed below.

Table 3-9 Memory access operation test—Memory resource information acquiry processing $${\rm check}$$

Table 3-10 Memory access operation test—Memory read processing check

m .		т	M	
Test	2-1-2	Item	Memory access operation	
number		name	Check memory read processing	
Test ove	erview			
• Check	a memory r	ead proce	essing.	
Test con	nditions			
• Basic	parameter	s as liste	d in section 3.2.	
• DSRC	-LPCP/LP	P must o	perate normally.	
• DSRC	connectio	n proces	sing must be completed, and communication connection state	
must	have been	establish	ed.	
• Local	port num	nber info	ormation for normal memory access port must have been	
excha	nged.			
• For th	e operation	n test, us	e the following data as memory tag setting.	
1	Test data 1: any memory tag (recording type: volatile, management category: OBE)			
	[8 bytes]			
1	Test data 2	any sto	re data [variable length]	
*	* Set protection mode of data storage memory area to "SPF optional" and "Read			
	enabled.	"		
Test pro	ocedure			
1. As O	BE memo	ry acces	s information, TS sends memory read request command	
"read	Request" in	cluding i	nemory tag (test data 1) to OBE.	
2. OBE	returns m	emory r	ead response command "readResponse" as response to OBE	
memo	memory access information.			
Confirm	nation item	ıs		
• Verify	· Verify that TS receives memory read response command "readResponse," and that			
memo	memory tag store data content matches test data 1 and test data 2.			

Table 3-11 Memory access operation test—Memory write processing check

Test		Item	Memory access operation	
number	2-1-3	name	Check memory write processing	
Test ov	Tost ovorviow			
Choole		write prov	possing	
		write proc		
Test con	nditions			
• Basic	paramete	rs as liste	d in section 3.2.	
• DSRC	C-LPCP/LF	PP must o	perate normally.	
• DSRC	connection connection	on process	sing must be completed, and communication connection state	
must	have been	establish	ed.	
• Local	port nui	mber info	rmation for normal memory access port must have been	
excha	nged.			
• For th	ne operatio	on test, us	e the following data as memory tag setting.	
	Test data	1: any me	mory tag (recording type: volatile, management category:	
	OBE) [8 bytes]			
	Test data	2: any sto	re data [variable length]	
*	Set prote	ection mo	de of data storage memory area to "SPF optional" and "Write	
	enabled.	,,,,		
Test pro	ocedure			
1. As O	BE memo	ory acces	s information, TS sends memory write request command	
"writ€	eRequest"	including	memory tag (test data 1) and store data (test data 2) to OBE.	
2. OBE	returns m	nemory w	rite response command "writeResponse" as response to OBE	
memo	memory access information.			
Confirm	Confirmation items			
• Verify	\cdot $% The Verify that TS receives memory write response command "writeResponse," and that$			
memo	memory tag store data content matches test data 1.			

Table 3-12 Memory access operation test—Bulk memory read processing check

Test	2-1-4	Item	Memory access operation			
number		name	Check bulk memory read processing			
Test ov	Test overview					
• Check	k bulk mer	nory read	l processing.			
Test co	nditions					
• Basic	paramete	rs as liste	ed in section 3.2.			
· DSR0	C-LPCP/LI	PP must o	operate normally.			
· DSR0	C connecti	on proces	ssing must be completed, and communication connection state			
must	have been	establis	hed.			
• Local	port nui	mber inf	ormation for normal memory access port must have been			
excha	inged.					
• For t	he operatio	on test, u	se the following data as memory tag setting.			
	Test data	1: any m	emory tag (recording type: volatile, management category:			
		OBE	C) [8 bytes]			
	Test data	2: any st	ore data [variable length]			
	Test data	3: any m	emory tag (recording type: volatile, management category:			
		OBE	C) [8 bytes]			
	Test data 4: any store data [variable length]					
	* Set protection mode of data storage memory area to "SPF optional" and "Read enabled."					
Test pr	ocedure					
1. As O	BE memo	ry access	information, TS sends bulk memory read request command			
"read	BulkRequ	est" inclu	ding memory tag list (test data 1 and test data 3) to OBE.			
2. OBE	returns bu	ılk memo	ory read response command "readBulkResponse" as response to			
OBE	OBE memory access information.					
Confirm	mation iter	ms				
• Verify	y that TS 1	receives b	oulk memory read response command "readBulkResponse," and			
that	that memory tag list content matches test data 1 and 2, and test data 3 and 4,					

respectively.

Table 3-13 Memory access operation test—Bulk memory write processing check

Test		Item	Memory access operation				
number	2-1-5	name	Check bulk memory write processing				
Test ove	Test overview						
• Check	bulk mer	nory read	l processing.				
Test cor	nditions						
• Basic	paramete	rs as liste	ed in section 3.2.				
• DSRC	-LPCP/LF	PP must o	operate normally.				
• DSRC	connectio	on proces	sing must be completed, and communication connection state				
must	have been	establis	ned.				
• Local	port nur	mber inf	ormation for normal memory access port must have been				
excha	nged.						
• For th	ne operatio	on test, ı	ase the following data as memory tag setting. Test data are as				
follow	s.						
	Test data	1: any m	emory tag (recording type: volatile, management category:				
		OBE)	[8 bytes]				
	Test data	2: any sto	pre data [variable length]				
1	Test data	3: any m	emory tag (recording type: volatile, management category:				
		OBE)	[8 bytes]				
	Test data	4: any sto	pre data [variable length]				
* (Set protec	tion mod	e of data storage memory area to "SPF optional" and "Write				
	enabled.	"					
Test pro	ocedure						
1. As OI	BE memor	ry access	information, TS sends bulk memory write request command				
"write	BulkRequ	uest" incl	uding memory tag list (test data 1 and 2, and test data 3 and 4)				
to OB	E.						
2. OBE :	OBE returns bulk memory write response command "writeBulkResponse" as response						
to OB	to OBE memory access information.						
Confirm	nation iter	ms					
• Verify	that TS	receives	bulk memory write response command "writeBulkResponse,"				
and th	nat memor	ry tag list	and that memory tag list content matches test data 1 and test data 3.				

Table 3-14 Memory access operation test—Nonvolatile memory write processing check (option)

	-	-			
Test	2-2-1	Item	Memory access operation		
number		name	Check nonvolatile memory write processing (option)		
Test ov	erview				
• Check	nonvolati	le memor	y write processing.		
Test con	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
• DSRC	connectio	n process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port nun	nber info	rmation for normal memory access port must have been		
excha	nged.				
• OBE	nust have	a nonvola	atile memory area.		
• For th	e operation	n test, us	e the following data as memory tag setting.		
	Test data 1: any memory tag (recording type: nonvolatile, management category:				
		OBE)	[8 bytes]		
	Test data 2	any sto	re data [variable length]		
* S	* Set protection mode of data storage memory area to "SPF optional" and "Write				
	enabled."				
Test pro	ocedure				
1. As C	BE memo	ory acces	s information, TS sends memory write request command		
"writ	eRequest" i	including	memory tag (test data 1) and store data (test data 2) to OBE.		
2. OBE	returns m	lemory w	rite response command "writeResponse" as response to OBE		
meme	ory access i	informati	on.		
Confirm	Confirmation items				
• Verify	· Verify that TS receives memory write response command "writeResponse," and that				
memo	memory tag store data content matches test data 1.				

Test	2-3-1	Item	Memory access operation	
number		name	Check memory read processing (no memory tag)	
Test ove	erview			
• Check	memory	read proc	essing (no memory tag).	
Test cor	nditions			
• Basic	paramete	rs as liste	ed in section 3.2.	
• DSRC	-LPCP/LF	PP must o	operate normally.	
• DSRC	connectio	on proces	sing must be completed, and communication connection state	
must	have been	establis	ned.	
• Local	· Local port number information for normal memory access port must have been			
excha	exchanged.			
Test pro	ocedure			
1. As O	. As OBE memory access information, TS sends memory read request command			
"read	Request" v	with no n	nemory tag to OBE.	
2. OBE	sends OB	E denial	response command "OBEDenialResponse" as response to OBE	
memo	memory access information.			
Confirm	Confirmation items			
• Verify	• Verify that TS receives OBE denial response command "OBEDenialResponse," and that			
status	status is (6) "No applicable memory tag."			

Table 3-15 Memory access operation test—Memory read processing check (no memory tag)

Table 3-16 Memory access operation test—Memory write processing check (protection mode violation)

			-			
Test	5	2-3-2	Item	Memory access operation		
nun	nber		name	Check memory read processing (protection mode violation)		
Te	Test overview					
•	Check	memory r	ead proce	essing (protection mode violation).		
Te	est cor	nditions				
•	Basic	parameter	rs as liste	d in section 3.2.		
•	DSRC	-LPCP/LP	P must og	perate normally.		
•	DSRC	connectio	n proces	sing must be completed, and communication connection state		
1	must	have been	establish	ed.		
•]	Local	port nun	nber info	ormation for normal memory access port must have been		
	excha	nged.				
•	For th	e operatio	n test, us	e the following data as memory tag setting.		
	Test data 1: any memory tag (recording type: volatile, management category: OBE)					
			[8 byte	es]		
	,	Test data 2	2: any sto	re data [variable length]		
	* Set protection mode of data storage memory area to "SPF optional" and "Read					
	prohibited."					
Te	est pro	ocedure				
1	As O	BE memo	ory acces	s information, TS sends memory read request command		
	"readI	Request" ir	ncluding	memory tag (test data 1) to OBE.		
2.	OBE :	sends OBF	E denial :	response command "OBEDenialResponse" as response to OBE		
1	memory access information.					
С	onfirn	nation iten	ıs			
• •	Verify	that TS r	eceives C	BE denial response command "OBEDenialResponse," and that		
	status is (8) "Protection mode violation."					

Table 3-17 Memory access operation test—Memory write processing check (invalid command)

Test	2-3-3	Item	Memory access operation			
number		name	Check memory read processing (invalid command)			
Test overview						
Check memory read processing (invalid command).						
Test conditions						
• Basic parameters as listed in section 3.2.						
DSRC-LPCP/LPP must operate normally.						
• DSRC connection processing must be completed, and communication connection state						
must have been established.						
· Local port number information for normal memory access port must have been						
exchanged.						
Test procedure						
1. As OBE memory access information, TS sends memory read request command						
"readRequest" with invalid OpCommandType to OBE.						
2. OBE	. OBE sends OBE denial response command "OBEDenialResponse" as response to OBE					
meme	memory access information.					
Confirmation items						
• Verify that TS receives OBE denial response command "OBEDenialResponse," and that						
status	status is (16) "Invalid command (cannot interpret)."					

Table 3-18 Memory access operation test—Memory write processing check (write size exceeded)

Test	2-3-4	Item	Memory access operation			
number		name	Check memory read processing (write size exceeded)			
Test ove	erview					
• Check memory read processing (write size exceeded).						
Test conditions						
• Basic parameters as listed in section 3.2.						
DSRC-LPCP/LPP must operate normally.						
• DSRC connection processing must be completed, and communication connection state						
must have been established.						
• Local port number information for normal memory access port must have been						
exchanged.						
• For the operation test, use the following data as memory tag setting.						
Test data 1: any memory tag (recording type: volatile, management category: OBE)						
[8 bytes]						
Test data 2: any store data [variable length]						
* Set protection mode of data storage memory area to "SPF optional" and "Write						
enabled," and set memory allocation size to a smaller value than test data 2.						
Test procedure						
1. As C	OBE memory access information, TS sends memory write request command					
"write	"writeRequest" including memory tag (test data 1) and store data (test data 2) to OBE.					
2. OBE	2. OBE sends OBE denial response command "OBEDenialResponse" as response to OBE					
memory access information.						
Confirmation items						
• Verify that TS receives OBE denial response command "OBEDenialResponse," and that						
status	status is (9) "Access control violation."					
Table 3-19 Memory access operation test—Memory write processing check (SPF violation)

		T .				
Test	2-3-5	Item	Memory access operation			
number		name	Check memory write processing (SPF violation)			
Test ov	erview					
• Check	x memory	write pro	cessing (SPF violation)			
Test con	nditions					
• Basic	paramete	rs as list	ed in section 3.2.			
· DSRC	C-LPCP/LI	PP must o	operate normally.			
· DSRC	connecti	on proces	ssing must be completed, and communication connection state			
must	have been	establis	ned.			
• Local	port nui	mber inf	ormation for normal memory access port must have been			
excha	nged.					
• For th	ne operati	on test, u	ase the following data as memory tag setting. Test data are as			
follow	'S.					
	Test data	1: any m	emory tag (recording type: volatile, management category:			
		OBE)	[8 bytes]			
	Test data	2: any st	ore data [variable length]			
*	* Set protection mode of data storage memory area to "SPF optional."					
Test pr	ocedure					
1. As C	OBE mem	ory acce	ss information, TS sends memory write request command			
"writ	eRequest"	includin	g memory tag (test data 1) and store data (test data 2) to OBE.			
2. OBE	sends OB	E denial	response command "OBEDenialResponse" as response to OBE			
mem	memory access information.					
Confirm	nation iter	ms				
• Verify	• Verify that TS receives OBE denial response command "OBEDenialResponse," and that					
status	status is (11) "SPF mode violation."					

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Table 3-20 Memory access operation test—Bulk memory read processing check (maximum tag

Test 2-3-		Itom	Memory access operation				
	2-3-6	Item	Check bulk memory read processing (maximum tag number				
number		name	exceeded)				
Test ove	erview						
• Check	bulk mem	nory read	processing (maximum tag number exceeded).				
Test cor	nditions						
• Basic	parameter	s as liste	d in section 3.2.				
• DSRC	-LPCP/LP	P must o	perate normally.				
• DSRC	connectio	n proces	sing must be completed, and communication connection state				
must	have been	establish	ed.				
• Local	port nun	nber info	ormation for normal memory access port must have been				
excha	nged.						
• For th	ne operatio	on test, u	se the following data as memory tag setting. Test data are as				
follow	s.						
,	Test data 1	any me	mory tag (recording type: volatile, management category: OBE)				
		[8 byte	es]				
,	Test data 2	2: any me	mory tag (recording type: volatile, management category: OBE)				
		[8 byte	es]				
,	Test data 3	3: any me	mory tag (recording type: volatile, management category: OBE)				
	[8 bytes]						
* A	t the OBE,	, set the 1	naximum number of memory tags for bulk reading to 2.				
Test pro	ocedure						
1. As OI	BE memor	y access	information, TS sends bulk memory read request command				
"readl	BulkReque	st" inclu	ding memory tag list (test data 1, test data 2, test data 3) to				
OBE.							
2. OBE	. OBE sends OBE denial response command "OBEDenialResponse" as response to OBE						
memo	memory access information.						
Confirm	nation item	ıs					
• Verify	· Verify that TS receives OBE denial response command "OBEDenialResponse," and that						
status	s is (7) "ma	ximum ta	ag number for bulk processing exceeded."				

Table 3-21 Memory access operation test—Memory allocation processing check (option)

Test	9-4-1	Item	Memory access operation					
number	241	name	Check memory allocation processing (option)					
Test ov	Test overview							
• Check	k memory	allocation	processing.					
Test co	nditions							
• Basic	paramete	rs as liste	d in section 3.2.					
· DSR0	C-LPCP/LI	PP must og	perate normally.					
· DSR0	C connecti	on process	sing must be completed, and communication connection state					
must	have been	establish	ed.					
• Local	port nu	mber info	rmation for normal memory access port must have been					
excha	nged.							
• OBE	must have	e memory	allocation function.					
• For t	ne operatio	on test, us	e the following data as memory allocation setting.					
	Test data 1: any memory tag (recording type: volatile, management category:							
	allocation at RSU possible) [8 bytes]							
	Test data	2: any tag	information (protection mode, memory allocation size, initial					
	setting value) [variable length]							
Test pr	ocedure							
1. As O	BE memo	ry access	information, TS sends memory allocation request command					
"mem	oryAllocR	equest" ir	ncluding memory tag (test data 1) and tag information (test					
data	2) to OBE.							
2. OBE	returns	memory	allocation response command "memoryAllocResponse" as					
respo	response to OBE memory access information.							
Confiri	Confirmation items							
• Verify	• Verify that TS receives memory allocation response command "memoryAllocResponse,"							
and t	and that memory tag content matches test data 1.							

Table 3-22 Memory access operation test—Memory release processing check (option)

		T .					
Test	2-4-2	Item	Memory access operation				
number		name	Check memory release processing (option)				
Test ove	erview						
• Check	a memory r	elease pr	ocessing.				
Test cor	nditions						
• Basic	parameter	s as liste	d in section 3.2.				
• DSRC	-LPCP/LP	P must oj	perate normally.				
• DSRC	connectio	n process	sing must be completed, and communication connection state				
must]	have been	establish	ed.				
• Local	port nun	nber info	rmation for normal memory access port must have been				
excha	nged.						
• OBE 1	nust have	memory	release function.				
• For th	e operation	n test, us	e the following data as memory tag setting.				
,	Test data 1: any memory tag (recording type: volatile, management category:						
	allocation at RSU possible) [8 bytes]						
Test pro	ocedure						
1. As O	BE memor	ry access	s information, TS sends memory release request command				
"mem	oryFreeRe	quest" ind	cluding memory tag (test data 1) to OBE.				
2. OBE 1	returns me	mory rel	ease response command "memoryFreeResponse" as response to				
OBE 1	OBE memory access information.						
Confirm	Confirmation items						
• Verify	+ Verify that TS receives memory release response command "memoryFreeResponse," and						
that n	that memory tag content matches test data 1.						

Table 3-23 Memory access operation test—Password protected memory allocation processing check (option)

Test	2-5-1	Item name	Memory access operation		
number			Check password protected memory allocation processing		
			(option)		
Test ov	erview				
• Check	x password	d protecte	d memory allocation processing.		
Test con	nditions				
• Basic	paramete	rs as liste	d in section 3.2.		
· DSRC	C-LPCP/LI	PP must o	perate normally.		
• DSRC	connecti	on process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port nui	mber info	ormation for normal memory access port must have been		
excha	nged.				
• OBE	- must have	e memory	allocation and password protection functions.		
• For th	ne operatio	on test, us	se the following data as password protected memory allocation		
settin	g.				
	- Test data	1: any me	mory tag (recording type: volatile, management category:		
		allocati	on at RSU possible) [8 bytes]		
	Test data	2: any tag	g information (protection mode, memory allocation size,		
		passwo	rd. initial setting value) [variable length]		
Test pro	ocedure				
1. As OI	BE memor	rv access	information, TS sends password protected memory allocation		
reque	st comma	, nd "memo	rvAllocRequestWithCredence" including memory tag (test data		
1) and	tag infor	mation (te	est data 2) to OBE		
2 OBE	returns	nasswo	rd protected memory allocation response command		
"mom	orvAllocB	osnonsoW	The protected memory answered response communic		
Confirm	nation itor		Therefore as response to ODD memory access mormation.		
Varifa					
· verity	that TS	receives	password protected memory allocation response command		
mem	memoryAllocKesponseWithCredence," and that memory tag content matches test data				
1.					

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Table 3-24 Memory access operation test—Password protected memory release processing check (option)

Teat	bet	Itom	Memory access operation			
2-5-2	2 - 5 - 2	Item	Check password protected memory release processing			
number		name	(option)			
Test ove	erview					
• Check	password	protecte	d memory release processing.			
Test cor	nditions					
• Basic	parameter	s as liste	d in section 3.2.			
• DSRC	-LPCP/LP	P must og	perate normally.			
• DSRC	connectio	n proces	sing must be completed, and communication connection state			
must	have been	establish	ed.			
• Local	port nun	nber info	ormation for normal memory access port must have been			
excha	nged.					
• OBE 1	nust have	memory	release and password protection functions.			
• For th	e operation	n test, us	e the following data as password protected memory tag setting.			
	Test data 1	any me	mory tag (recording type: volatile, management category:			
	allocation at RSU possible) [8 bytes]					
	Test data 2: any memory tag [8 bytes]					
Test pro	ocedure					
1. As O	BE memor	y access	information, TS sends password protected memory release			
reque	st comman	d "memo	oryFreeRequestWithCredence" including memory tag (test data			
1) and	l password	informat	tion (test data 2) to OBE.			
2. OBE	returns	passw	ord protected memory release response command			
"mem	oryFreeRes	sponseWi	ithCredence" as response to OBE memory access information.			
Confirm	nation item	ıs				
• Verify	that TS	receive	s password protected memory release response command			
"mem	"memoryFreeResponseWithCredence," and that memory tag content matches test data 1.					

Table 3-25 Memory access operation test—Password protected memory read processing check (ontion)

Test	2-5-3	Item	Memory access operation					
number		name	Check password protected memory read processing (option)					
Test ove	Test overview							
• Check	a password	d protected	d memory read processing.					
Test con	nditions							
• Basic	paramete	rs as liste	d in section 3.2.					
• DSRC	-LPCP/LF	PP must oj	perate normally.					
• DSRC	connectio	on process	sing must be completed, and communication connection state					
must	have been	establish	ed.					
• Local	port nui	mber info	rmation for normal memory access port must have been					
excha	nged.							
· OBE 1	must have	e password	l protection function.					
• For th	e operatio	on test, us	e the following data as password protected memory tag and					
store	data settii	ng.						
	Test data	1: any me	mory tag (recording type: volatile, management category:					
		OBE)	[8 bytes]					
1	Test data	2: any pas	sword [8 bytes]					
	Test data	3: any sto	re data [variable length]					
* S	et protect	ion mode o	of data storage memory area to "SPF optional" and "Read					
e	enabled."							
Test pro	ocedure							
1. As OF	BE memor	y access in	nformation, TS sends password protected memory read					
comm	and "read	RequestW	TithCredence" including memory tag (test data 1) and password					
(test d	lata 2) to (OBE.						
2. OBE 1	returns pa	ussword pr	rotected memory read response command					
"read	"readResponseWithCredence" as response to OBE memory access information.							
Confirm	nation iter	ms						
• Verify	that TS r	eceives pa	assword protected bulk memory read request command					
"readl	"readResponseWithCredence," and that memory tag store data content matches test							
data 1	data 1 and test data 3.							

Table 3-26 Memory access operation test—Password protected memory write processing check (option)

Test	2-5-4	Item	Memory access operation					
number		name	Check password protected memory write processing (option)					
Test ov	Test overview							
• Check	a password	protected	d memory write processing.					
Test con	nditions							
• Basic	parameter	s as liste	d in section 3.2.					
• DSRC	C-LPCP/LP	P must oj	perate normally.					
• DSRC	connectio	n process	sing must be completed, and communication connection state					
must	have been	establish	ed.					
• Local	port nun	nber info	ormation for normal memory access port must have been					
excha	nged.							
• OBE 1	must have	password	l function.					
• For th	ne operatio	on test, u	se the following data as password protected memory tag and					
store	data settin	g.						
	Test data 1	any me	mory tag (recording type: volatile, management category: OBE)					
		[8 byte	es]					
	Test data 2	2: any pas	ssword [8 bytes]					
	Test data 3	3: any sto	re data [variable length]					
* Set	protection	mode of	data storage memory area to "SPF optional" and "Write					
er	enabled."							
Test pro	ocedure							
1. As OB	E memory	access in	formation, TS sends password protected bulk memory write					
reques	st comman	d "writeR	equestWithCredence" including memory tag (test data 1),					
passw	ord (test da	ata 2), an	d store data (test data 3) to OBE.					
2. OBE 1	returns pas	ssword pi	rotected memory write response command					
"write	"writeResponseWithCredence" as response to OBE memory access information.							
Confirm	nation item	ıs						
• Verify	Verify that TS receives password protected memory write response command							
"write	"writeResponseWithCredence," and that memory tag content matches test data 1.							

Table 3-27 Memory access operation test—Password protected bulk memory read processing

check (option)					
m e et		TANK	Memory access operation		
Test	2-5-5	Item	Check password protected bulk memory read processing		
number		name	(option)		
Test or	verview				
• Chec	k passwore	d protecte	d bulk memory read processing.		
Test co	onditions				
• Basic	e paramete	rs as liste	d in section 3.2.		
• DSR	C-LPCP/LI	PP must o	perate normally.		
• DSR	C connecti	on process	sing must be completed, and communication connection state		
must	have been	ı establish	ed.		
• Loca	port nu	mber info	rmation for normal memory access port must have been		
exch	anged.				
• OBE	must have	e password	l function.		
• For t	he operati	ion test, u	se the following data as password protection and store data		
setti	ng.				
	Test data	1: any me	mory tag (recording type: volatile, management category:		
		OBE)	[8 bytes]		
	Test data	2: any pas	ssword [8 bytes]		
	Test data	3: any sto	re data [variable length]		
	Test data	4: any me	mory tag (recording type: volatile, management category: OBE)		
		[8 bytes	3]		
	Test data	5: any pas	ssword [8 bytes]		
	Test data	6: any sto	re data [variable length]		
*	Set protect	ion mode	of data storage memory area to "SPF optional" and "Read		
	enabled."				
Test p	rocedure				
1. As O	BE memor	y access in	nformation, TS sends password protected bulk memory read		
requ	est comma	nd "ReadI	BulkRequestWithCredence" including password protected		
mem	ory tag list	t (test data	a 1,2 and 4,5) to OBE.		
2. OBE	returns pa	assword p	rotected bulk memory read response command		
"read	BulkResp	onseWith(Credence" as response to OBE memory access information.		
Confir	mation iter	ms			
• Ver	ify that TS	receives	password protected bulk memory read response command		
"rea	adBulkRes	ponseWitł	and that data list content matches test data 1 and		
З, а	3, and test data 4 and 6, respectively.				

Table 3-28 Memory access operation test—Password protected bulk memory write processing

Test number 1 tem name Memory access operation Check password protected bulk memory write processing (option) Test overview • Check password protected bulk memory write processing. Test conditions • Basic parameters as listed in section 3.2. DSRC tPCP/LPP must operate normally. • DSRC connection processing must be completed, and communication connection state must have been established. • Local port number information for normal memory access port must have been exchanged. • OBE must have password function. • For the operation test, use the following data as password protected memory tag and store data setting. • Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] • Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 3: any store data [variable length] • Test data 5: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure • As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. • OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items • Verify that TS recoives password protected bulk memory write response comma				check (option)			
Test number 2-5-6 Item name Check password protected bulk memory write processing (option) Test overview - Check password protected bulk memory write processing. Test conditions - Basic parameters as listed in section 3.2. DSRC-LPCP/LPP must operate normally. - DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. - OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. - Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] - Test data 3: any store data [variable length] Tost data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] - Test data 5: any password [8 bytes] - Test data 6: any store data [variable length] * * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." * Test procedure 1 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkResponseWithCredence" as response to OBE memory access information.	Test		т,	Memory access operation			
number name (option) Test overview . Check password protected bulk memory write processing. Test conditions . Basic parameters as listed in section 3.2. DSRC-LPCP/LPP must operate normally. . DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. . OBE must have password function. . For the operation test, use the following data as password protected memory tag and store data setting. . Test data 1: any memory tag (recording type: volatile, management category: OBE) . [8 bytes] . Test data 2: any password [8 bytes] . Test data 5: any password [8 bytes] . Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Co		2 - 5 - 6	Item	Check password protected bulk memory write processing			
Test overview • Check password protected bulk memory write processing. Test conditions • Basic parameters as listed in section 3.2. • DSRC-LPCP/LPP must operate normally. • DSRC connection processing must be completed, and communication connection state must have been established. • Local port number information for normal memory access port must have been exchanged. • OBE must have password function. • For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protecte	number		name	(option)			
 Check password protected bulk memory write processing. Test conditions Basic parameters as listed in section 3.2. DSRC-LPCP/LPP must operate normally. DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information, "Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	Test ove	erview					
 Test conditions Basic parameters as listed in section 3.2. DSRC-LPCP/LPP must operate normally. DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	• Check	password	protected	l bulk memory write processing.			
 Basic parameters as listed in section 3.2. DSRC-LPCP/LPP must operate normally. DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	Test cor	nditions					
 DSRC-LPCP/LPP must operate normally. DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 5: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	• Basic	parameter	s as liste	d in section 3.2.			
 DSRC connection processing must be completed, and communication connection state must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns passWord protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	• DSRC	-LPCP/LP	P must op	perate normally.			
 must have been established. Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	• DSRC	connectio	n process	sing must be completed, and communication connection state			
 Local port number information for normal memory access port must have been exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	must	have been	establish	ed.			
 exchanged. OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	• Local	port num	nber info	rmation for normal memory access port must have been			
 OBE must have password function. For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	excha	nged.					
 For the operation test, use the following data as password protected memory tag and store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	• OBE 1	nust have	password	function.			
 store data setting. Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4.	• For th	ne operatio	on test, u	se the following data as password protected memory tag and			
 Test data 1: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	store	data settin	g.				
 [8 bytes] Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	1	Test data 1	any me	mory tag (recording type: volatile, management category: OBE)			
 Test data 2: any password [8 bytes] Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 			[8 byte	s			
 Test data 3: any store data [variable length] Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	1	Test data 2	any pas	sword [8 bytes]			
 Test data 4: any memory tag (recording type: volatile, management category: OBE) [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory tag list content matches test data 1 and test data 4. 	1	Test data 3	any stor	re data [variable length]			
 [8 bytes] Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	1	Test data 4	any me	mory tag (recording type: volatile, management category: OBE)			
 Test data 5: any password [8 bytes] Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 			[8 byte	s]			
 Test data 6: any store data [variable length] * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	1	Test data 5	any pas	sword [8 bytes]			
 * Set protection mode of data storage memory area to "SPF optional" and "Write enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	1	Test data 6	any stor	re data [variable length]			
 enabled." Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	* (* Set protection mode of data storage memory area to "SPF optional" and "Write					
 Test procedure 1. As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 		enabled."					
 As OBE memory access information, TS sends password protected bulk memory write request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	Test pro	ocedure					
 request command "writeBulkRequestWithCredence" including password protected data list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	1. As O	BE memory	y access i	nformation, TS sends password protected bulk memory write			
 list (test data 1 to 6) to OBE. 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	reque	est commar	nd "writel	BulkRequestWithCredence" including password protected data			
 2. OBE returns password protected bulk memory write response command "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	list (t	est data 1	to 6) to O	BE.			
 "writeBulkResponseWithCredence" as response to OBE memory access information. Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	2. OBE	returns pa	ssword p	rotected bulk memory write response command			
 Confirmation items Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4. 	"write	"writeBulkResponseWithCredence" as response to OBE memory access information.					
• Verify that TS receives password protected bulk memory write response command "writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4.	Confirm	nation item	is				
"writeBulkResponseWithCredence," and that memory tag list content matches test data 1 and test data 4.	• Verify	that TS r	eceives p	assword protected bulk memory write response command			
1 and test data 4.	"writ	eBulkResp	onseWitł	Credence," and that memory tag list content matches test data			
	<u>1 ano</u>	<u>l test dat</u> a	4.				

Table 3-29 Memory access operation test—Check of memory allocation processing in case of insufficient memory (option)

Test number 2-6-1		Item	Memory access operation						
	2-6-1		Check memory allocation processing (not enough free						
		name	memory)						
Test ov	Test overview								
• Check	a memory	allocation	processing (not enough free memory).						
Test con	nditions								
• Basic	paramete	rs as liste	d in section 3.2.						
• DSRC	-LPCP/LI	PP must o	perate normally.						
• DSRC	connecti	on proces	sing must be completed, and communication connection state						
must	have been	n establish	ed.						
• Local	port nui	mber info	ormation for normal memory access port must have been						
excha	nged.								
• OBE	must have	e memory	allocation function.						
• For th	ne operatio	on test, us	e the following data as memory allocation setting.						
Т	est data 1	: any men	nory tag (recording type: volatile, management category:						
	allocation at RSU possible) [8 bytes]								
Т	est data 2	any tag	information (protection mode, memory allocation size, initial						
	setting value) [variable length]								
* S	* Set memory allocation size to a larger value than available in volatile memory area								
f	or data.								
Test pro	ocedure								
1. As OF	3E memor	y access in	nformation, TS sends memory allocation request command						
"mem	"memoryAllocRequest" including memory tag (test data 1) and tag information (test								
data 2	data 2) to OBE.								
2. OBE s	2. OBE sends OBE denial response command "OBEDenialResponse" as response to OBE								
memo	memory access information.								
Confirm	Confirmation items								
• Veri	· Verify that TS receives OBE denial response command "OBEDenialResponse," and								
1									

that status is (5) "Not enough free OBE memory."

Table 3-30 Memory access operation test—Mismatched password memory read processing check (option)

Trant.	0.0	Ttana	Memory access operation		
lest	rest 20	Item	Check password protected memory read processing (option)		
number	2	name	(password mismatch)		
Test ov	erview	•			
• Check	x passwo	ord protecte	d memory read processing when password does not match.		
Test co	nditions				
• Basic	parame	ters as liste	ed in section 3.2.		
· DSRC	C-LPCP/I	LPP must o	perate normally.		
• DSRC	connec	tion proces	sing must be completed, and communication connection state		
must	have bee	en establish	ned.		
• Local	port n	umber info	ormation for normal memory access port must have been		
excha	nged.				
• OBE	must ha	ve passwor	d function.		
• For t	he opera	tion test, ı	use the following data as password protected memory tag and		
store	data set	ting.			
Т	est data	1: any mem	ory tag (recording type: volatile, management category: OBE) [8		
		bvtesl			
Т	est data	2: anv tag i	nformation (protection mode, memory allocation size, password,		
		initial set	ting value) [variable length]		
Т	est data	3: any pass	word [8 bytes]		
* S	et prote	ction mode	of data storage memory area to "SPF optional" and "Read		
	enabled	"			
Test pr	ocedure				
1 As 0	BE men	orv access	information TS sends password protected memory allocation		
reque	st comm	and "memo	molucing and provide provide monory and the state		
1) and	tag inf	ormation (to	est data 2) to OBE		
2 OBE	roturr		ord protected memory allocation response command		
2. ODE "mom	orvAllog	BosnonsoW	VithCrodonco" as response to OBE memory access information		
	SF mom		nformation. TS sonds password protocted momenty read		
	and "roc	adRamastW	With Cradence, including moment tag (test data 1) and password		
(tost a	(test data 3) to OBE				
	iaia 0/ l	о ор <u>н</u> .			

4. OBE sends OBE denial response command "OBEDenialResponse" as response to OBE

memory access information.

- Confirmation items
- Verify that TS receives OBE denial response command "OBEDenialResponse," and that status is (10) "Password mismatch."

3.3.3 Test Items for IC Card Memory Access Application

The items for tests related to the IC card memory access application are listed below.

Test numbers 3-5-1 and 3-5-2 are selective. Only one of these has to be performed, depending on whether the OBE has EMV certification or not.

- OBE has EMV certification: perform 3-5-1
- OBE does not have EMV certification: perform 3-5-2

The test items of the IC card access application are the same for the contact-based IC card access application and the contactless IC card access application. Simply specify the correct port number in each case. Information about port numbers is given in section 3.2.4.4.

Table 3-31 IC card access operation test—Application start request check

Test Item IC card access operation				
number name Check application start request				
Test overview				
Check IC card access start operation.				
Test conditions				
• Basic parameters as listed in section 3.2.				
• IC card for testing must be set in OBE.				
DSRC-LPCP/LPP must operate normally.				
• DSRC connection processing must be completed, and communication connection s				
must have been established.				
Local port number information for IC card access application must have been exchan				
Test procedure				
1. As application start request, TS sends application start request command "initRequ				
to OBE.				
2. OBE returns application start response command "initResponse" as response				
application start request.				
Confirmation items				
· Verify that TS receives application start response command "initResponse" inclu-				
ATR information for test IC card.				

Test	2-1-9	Item	IC card access operation		
number	r J12	name	Check application end request		
Test ov	verview				
• Chec	k IC card a	access end	operation.		
Test co	nditions				
• Basic	e paramete	rs as liste	d in section 3.2.		
• IC ca	rd for test	ing must b	be set in OBE.		
· DSR	C-LPCP/LI	PP must of	perate normally.		
· DSR	C connecti	on process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port nu	mber info	ormation for IC card access application must have been		
excha	anged.				
• Start	• Start request for IC card access application must have been issued.				
Test pr	rocedure				
1. As ap	As application end request, TS sends application end request command "endRequest" to				
OBE	OBE.				
2. OBE	. OBE returns application end response command "endResponse" as response to				
appli	application end request.				
Confir	Confirmation items				
• Verif	• Verify that TS receives application end response command "endResponse."				

Table 3-32 IC card access operation test—Application end request check

Table 3-33 IC card access operation test—IC card read processing check

Test	0.0.1	Item	IC card access operation		
number	5-2-1	name	Check IC card read processing		
Test ov	erview				
• Check	IC card re	ead proce	ssing.		
Test con	nditions				
• Basic	parameter	rs as liste	d in section 3.2.		
• IC car	rd for testir	ng must k	be set in OBE.		
• DSRC	C-LPCP/LP	P must of	perate normally.		
• DSRC	connectio	n proces	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for IC card access application must have been exchanged.		
• Start	request for	· IC card	access application must have been issued.		
• IC car	rd for testir	ng must a	llow reading of data from specified position.		
• IC car	rd send con	nmand "i	CCCommand" must be used for operation testing with the		
follow	ing data.				
Te	Test data 1: ISO/IEC7816-4 compliant Command APDU [variable length ≤ 254 bytes]				
Test pr	ocedure				
1. As I0	As IC card command message, TS sends IC card send command "iCCCommand"				
includ	ling test da	ata 1 to O	BE.		
2. OBE	gets data c	orrespond	ling to test data 1 from IC card and returns IC card response		
send o	command "	iCCResp	onse" as response to IC card send command.		
Confirm	nation iten	ns			
• Verify	• Verify that TS receives IC card response send command "iCCResponse," and that				
specif	specified data from IC card are included.				

Table 3-34 IC card	access operation	test—IC card	read access	time c	eheck
--------------------	------------------	--------------	-------------	--------	-------

Test	3-2-2	Item	IC card access operation			
numb	ber 022	name	Check IC card read access time			
Tes	Test overview					
· C	heck time req	uired for I	C card read processing.			
Tes	st conditions					
• В	asic paramete	ers as liste	d in section 3.2.			
• I(C card for test	ing must l	be set in OBE.			
• D	SRC-LPCP/L	PP must og	perate normally.			
• D	SRC connecti	on process	sing must be completed, and communication connection state			
m	ust have beer	n establish	ed.			
· L	ocal port nu	mber info	ormation for IC card access application must have been			
ех	xchanged.					
• St	tart request fo	or IC card	access application must have been issued.			
• I(C card for test	ing must a	allow reading of data from specified position.			
• I(C card send co	mmand "i	CCCommand" must be used for operation testing with the			
fo	ollowing data.					
	Test data 1: ISO/IEC7816-4 compliant Command APDU [variable length ≤ 254					
	bytes]					
Tes	st procedure					
1. A	s IC card co	mmand r	nessage, TS sends IC card send command "iCCCommand"			
in	cluding test d	lata 1 to O	BE, and records send time as timestamp t1.			
2. O	BE gets data	correspon	ding to test data 1 from IC card and returns IC card response			
se	end command	"iCCResp	onse" as response to IC card command message.			
3. T	S receives IC	card resp	ponse send command "iCCResponse" from OBE, and records			
re	eceive time as	timestam	p t2.			
Cor	nfirmation ite	ms				
· Ve	erify that TS	receives	IC card response send command "iCCResponse," and that			
\mathbf{sp}	pecified data f	rom IC car	rd are included.			
• C	alculate IC ca	rd read ac	cess time as follows:			
	IC card read	access tin	ne = t2 - t1			
· 0	• Obtain [10] samples and take the average value as measurement result.					

Table 3-35 IC card access operation test—IC card write processing check

			1				
Tes	t	3-3-1	Item	IC card access operation			
nur	nber	001	name	Check IC card write processing			
Т	Test overview						
•	Check	IC card w	rite proce	essing.			
Т	est cor	nditions					
•	Basic	parameter	s as liste	d in section 3.2.			
•	IC car	d for testir	ng must b	e set in OBE.			
•	DSRC	-LPCP/LP	P must oj	perate normally.			
•	DSRC	connectio	n process	sing must be completed, and communication connection state			
	must l	have been	establish	ed.			
•	Local	port numb	er inform	ation for IC card access application must have been exchanged.			
	Start	request for	IC card	access application must have been issued.			
	IC car	d for testir	ng must a	llow writing of data to specified position.			
•	IC car	d send con	nmand "i	CCCommand" must be used for operation testing with the			
	follow	ing data.					
	- Test data 1: ISO/IEC7816-4 compliant Command APDU [variable length < 254						
	bytes]						
Т	est pro	ocedure					
1.	As IC	card comm	and mes	sage, TS sends IC card send command "iCCCommand"			
	includ	ing test da	ta 1 to O	BE.			
2.	OBE g	gets data co	orrespond	ling to test data 1 from IC card and returns IC card response			
	send command "iCCResponse" as response to IC card command message.						
C	onfirm	nation item	is				
•	Verify	that TS re	ceives IC	card response send command "iCCResponse."			
	Verify that specified data were written to write position on IC card.						

Table 3-36 IC card access operation test—IC card write access time check

Test	3-3-9	Item	IC card access operation				
number	552	name	Check IC card write access time				
Test o	Test overview						
• Chee	k time req	uired for I	C card write processing.				
Test c	onditions						
• Basi	c paramete	ers as liste	d in section 3.2.				
• IC c	ard for test	ing must l	be set in OBE.				
• DSR	C-LPCP/LI	PP must og	perate normally.				
• DSR	C connecti	on process	sing must be completed, and communication connection state				
mus	t have beer	n establish	ed.				
• Loca	l port nu	mber info	ormation for IC card access application must have been				
exch	anged.						
• Star	t request fo	or IC card	access application must have been issued.				
• IC c	ard for test	ing must a	allow writing of data to specified position.				
• IC c	ard send co	mmand "i	CCCommand" must be used for operation testing with the				
follo	wing data.						
	Test data 1	: ISO/IEC	7816-4 compliant Command APDU [variable length ≤ 254				
		bytes]					
Test p	rocedure						
1. As 1	C card co	mmand r	nessage, TS sends IC card send command "iCCCommand"				
inclu	ıding test d	lata 1 to O	BE, and records send time as timestamp t1.				
2. OBF	gets data	correspon	ding to test data 1 from IC card and returns IC card response				
send	command	"iCCResp	onse" as response to IC card command message.				
3. TS r	eceives IC	card respo	nse send command "iCCResponse" from OBE, and records				
rece	ve time as	timestam	p t2.				
Confi	mation ite	ms					
• Veri	y that TS 1	receives I(C card response send command "iCCResponse."				
• Veri	y that spec	cified data	were written to write position on IC card.				
• Calc	ulate IC ca	rd write a	ccess time as follows:				
	IC card	write acce	ss time = $t2 - t1$				
• Obta	Obtain [10] samples and take the average value as measurement result.						

Table 3-37 IC card access operation test—IC card reverse insertion error processing check

Test	0.4.1	Item	IC card access operation		
number	3-4-1	name	Check IC card reverse insertion error processing		
Test ov	erview				
• Check	operation	in case o	f error.		
Test con	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• IC car	d for testir	ng must k	e set in reverse in OBE.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
· DSRC	connectio	n process	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for IC card access application must have been exchanged.		
Test pro	Test procedure				
1. As ap	1. As application start request, TS sends application start request command "initRequest"				
to OB	E.				
2. OBE	sends OBE	denial re	esponse command "OBEDenialResponse" as response to		
applic	application start request.				
Confirm	nation item	IS			
• Verify	• Verify that TS receives OBE denial response command "OBEDenialResponse," and that				
status	status is (2).				

Table 3-38 IC card access operation test—Certification information acquiry processing check (with certification)

Test number	3-5-1	Item name	IC card access operation Check certification information acquiry processing (with certification)			
Test ove	erview					
• Check	send/rec	eive of ce	ertification information acquiry message for OBE with EMV			
certifi	cation.					
Test cor	nditions					
Basic	naramoto	re ae lieto	d in section 3.2			
· DSPC		DD must of	novato novmally			
		1 must 0	· · · · · · · · · · · · · · · · · · ·			
• DSRC	connecti	on process	sing must be completed, and communication connection state			
must	have been	i establish	ed.			
• Local	port nu	mber info	ormation for IC card access application must have been			
excha	nged.					
• OBE 1	OBE used for testing must have obtained EMV certification.					
Test pro	ocedure					
1. As ap	plication	start rec	quest, TS sends certification information request command			
"accre	ditationIr	nfoReques	t."			
2. OBE	sends	certif	ication information request response command			
"accre	ditationIr	nfoRespon	se" as response to application start request.			
Confirm	nation iter	ms				
• Vorify	that T	'S rocoiv	as cortification information request response command			
"comp	ditation Tr	fo Doom on	as "			
accre	altationIr	iiokespon	se.			
• Verify	that	received	certification information request response command			
"accre	ditationIr	nfoRespon	se" includes certification information, and that EMV			
certifi	cation is s	set to "Yes	" ·			

Table 3-39 IC card access operation test—Certification information acquiry processing check (no certification)

Test number		Itom	IC card access operation		
	3 - 5 - 2	Item	Check certification information acquiry processing (no		
		name	certification)		
Test ove	erview				
• Check	send/rece	ive of cei	tification information acquiry message for OBE without EMV		
certifi	cation.				
Test cor	nditions				
• Basic	parameter	s as liste	d in section 3.2.		
• DSRC	-LPCP/LP	P must oj	perate normally.		
• DSRC	connectio	n proces	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	er inform	ation for IC card access application must have been exchanged.		
• OBE u	used for tes	sting mus	st not have obtained EMV certification.		
Test procedure					
1. As app	1. As application start request, TS sends certification information request command				
"accre	"accreditationInfoRequest."				
2. OBE s	2. OBE sends certification information request response command				
"accre	"accreditationInfoResponse" as response to application start request.				
Confirm	Confirmation items				
• Verify	that TS	S receiv	res certification information request response command		
"accre	ditationInf	oRespon	se."		
• Verify	that 1	received	certification information request response command		
"accre	ditationInf	oRespon	se" includes certification information, and that EMV		
certifi	cation is se	et to "No.	"		

3.3.4 Test Items for Push-Type Information Delivery Application

The items for tests related to the push-type information delivery application are listed below. because the push-type information delivery application will handle various kinds of multimedia content, each test item is intended to check reception functionality for about 1000 octets. However, to accommodate also OBEs with a reception capacity for less than that, the test data size is defined as "min(1000, MaxPushBodySize)," allowing selection either of 1000 octets or MaxPushBodySize (maximum content size that can be received by push client).

Test number 4-3-1 is to be performed only for OBEs with IP connectivity test function.

Table 3-40 Push-type information delivery application test—Check initial connection operation

Test	4-1-1	Item	Push-type information delivery operation		
number	4-1-1	name	Check initial connection operation		
Test ov	erview				
• Check	x initial co	nnection o	operation of push-type information delivery application		
Test con	nditions				
• Basic	paramete	rs as liste	d in section 3.2.		
• DSRC	C-LPCP/LF	PP must of	perate normally.		
• Push-	type infor	mation de	livery application must be implemented in OBE.		
• OBE 1	must decla	are DSRC	client resource information.		
Test pro	Test procedure				
1. Establ	1. Establish DSRC connection.				
2. OBE s	ends clien	it informa	tion notification command "ClientInformation" as DSRC client		
resour	ce inform	ation.			
Confirm	Confirmation items				
• Verify	• Verify that TS receives client information notification command "ClientInformation,"				
and th	and that content matches declared DSRC client resource information.				

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Table 3-41 Push-type information delivery application test—Check push communication with no confirmation response (individual communication)

Test number		Itom	Push-type information delivery operation			
	4-2-1	Item	Check push communication with no confirmation response			
		name	(individual communication)			
Test ov	erview					
• Check	operation	of push-	type information delivery application with push communication			
requir	ring no con	firmatior	n response (individual communication).			
Test con	nditions					
• Basic	parameter	s as liste	d in section 3.2.			
• DSRC	-LPCP/LP	P must o	perate normally.			
• DSRC	connectio	n proces	sing must be completed, and communication connection state			
must	have been	establish	ed.			
• Local	port numb	er inform	nation for push-type information delivery application must have			
been e	exchanged.					
• For th	e operation	n test, us	e the following test data to be sent from TS to OBE.			
Te	est data 1:	Any data	for application type / content type included in client			
		informa	tion notification command "ClientInformation," min(1000,			
	MaxPushBodySize) octets. (text-display or browser) // text-plain					
		preferab	le.			
Te	est data 2: .	Any data	converted into content type not included in client information			
		notificat	ion command "ClientInformation," min(1000,			
		MaxPus	hBodySize).			
Test pro	ocedure					
1. TS	sends test	data 1 to	OBE as push communication with no confirmation response.			
2. TS	sends test	data 2 to	OBE as push communication with no confirmation response.			
3. OB	E returns j	oush deli	very abort command "PushAbortOperation."			
Confirm	nation item	ıs				
• Verify	that OBE	receives	push communication with no confirmation response in step 1,			
and th	nat it mate	hes test o	lata 1.			
• Verify	that push	client in	OBE does not execute content in step 2.			
• Verify	+ Verify that push delivery abort command "PushAbortOperation" received by TS from					

OBE in step 3 has status code (5) "Cannot process specified ContentType."

Table 3-42 Push-type information delivery application test—Check push communication with no confirmation response (broadcast communication)

m i		T .	Push-type information delivery operation						
Test	4-2-2	Item	Check push communication with no confirmation response						
number		name	(broadcas	t communicatio	on)				
Test ove	erview	•							
• Check	operati	ion of	push-type	information	delivery	application	with push		
comm	communication requiring no confirmation response (broadcast communication).								
Test con	Test conditions								
• Basic	• Basic parameters as listed in section 3.2.								
• DSRC	DSRC-LPCP/LPP must operate normally.								
• Push-	type infor	mation de	livery appl	ication must be	e impleme	nted in OBE.			
• For th	ne operatio	on test, us	e the follov	ving test data t	o be sent f	from TS to OB	E.		
	Test data	a 1: Any d	ata for con	tent type inclue	ded in DSI	RC client reso	urce		
		infor	mation, mi	n(1000, MaxPu	shBodySiz	ze). (text-displ	ay or		
		brow	ser) / text-p	olain preferable	.				
Test pro	ocedure								
1. TS spec	cifies grou	p broadca	st address	as link address	s, and uses	s LPP broadca	st re-execute		
functio	on (using s	same han	dle as argu	ment for Invok	e.req) to s	end test data	1 as push		
comm	communication with no confirmation response continuously n[2] times.								
Confirm	nation iter	ms							
• Verify	that OBE	2 receives	one push co	ommunication	with no co	nfirmation res	ponse in step		
1, and	l that it m	atches tes	st data 1.						

Table 3-43 Push-type information delivery application test—Check push communication with confirmation response (response timing switch-over)

			_	_				
Teat		Itom	Push-t	ype informatio	n delivery	operation		
rumbor	4-2-3	namo	Check	push communi	ication witl	h confirmation	n respor	ıse
number		name	(respon	ise timing swit	ch-over)			
Test ove	erview							
• Check	· Check operation of push-type information delivery application with push							
comm	unication 1	requiring	confirmation	on.				
Test con	nditions							
• Basic	parameter	rs as liste	d in section	3.2.				
• DSRC	-LPCP/LP	P must o	perate norn	nally.				
• DSRC	connectio	n proces	sing must l	be completed,	and comm	unication con	inection	ı state
must	have been	establish	ed.					
• Local	port numb	er inforn	nation for p	ush-type inform	nation deli	very applicati	on mus	t have
been e	exchanged.							
• For th	ne operation	n test, us	e the follow	ing test data t	o be sent fi	rom TS to OBI	E.	
	Test data	1: Any d	ata for cont	ent type includ	led in DSR	C client resou	rce	
		inform	nation, min(1000, MaxPus	hBodySize). (text-display	v or brov	wser) /
		text-pl	lain prefera	ble.				
Test pro	Test procedure							
1. TS se	ends test o	data 1 t	o OBE as	push commun	nication w	ith confirmat	ion res	ponse,
specif	ying "Resp	onseTimi	ing(0)."					
2. After	reception i	s complet	te, OBE ret	urns push com	munication	n with confirm	ation	
respon	nse confirm	nation co	mmand "Co	nfirmedPushR	lesponse."			
3. TS set	nds test da	ta 1 to O	BE as push	communicatio	on with con	firmation resp	oonse,	
specif	ying "Resp	onseTimi	ing(1)."					
4. After	transfer is	complete	e, OBE retu	rns push comn	nunication	with confirma	tion res	sponse
confir	mation con	nmand "(ConfirmedP	ushResponse."				
5. TS set	ends test o	data 1 t	o OBE as	push commun	nication w	ith confirmat	ion res	ponse,
specif	ying "Resp	onseTimi	ing(2)."					
6. After	content exe	ecution is	s complete,	OBE returns p	ush commu	unication with	confirr	nation
respon	nse confirm	nation co	mmand "Co	nfirmedPushR	lesponse."			
Confirm	nation item	ns						
• Verify	that OBE	receives	push comm	unication with	confirmati	ion response in	n steps	1, 3, 5,
and th	nat it mate	hes test o	lata 1.					
• Verify	that TS re	eceives co	onfirmation	response confi	rmation co	mmand		
"Confi	"ConfirmedPushResponse" in steps 2, 4, 6.							

Table 3-44 Push-type information delivery application test—Check push communication with confirmation response (same response timing repeat)

		T .	Push-type information delivery operation					
number 4-2	4-2-4	Item	Check push communication with confirmation response					
		name	(same response timing repeat)					
Test o	overview							
• Che	ck operat	ion of	push-type information delivery application with push					
com	munication	requiring	g confirmation.					
Test o	onditions							
• Bas	Basic parameters as listed in section 3.2							
• DSI	RC-LPCP/LI	PP must o	operate normally.					
• DSI	RC connecti	ion proces	sing must be completed, and communication connection state					
mus	st have beer	n establist	ned.					
• Loc	al port nur	nber info	rmation for push-type information delivery application must					
hav	e been exch	anged.						
• For	the operat	ion test.	use the following test data to be sent from TS to OBE. Use					
diffe	erent conter	nt for test	data 1 to test data 3.					
	Test dat	a 1: Anv d	ata for content type included in DSRC client resource					
	1000 440	infor	mation, min(1000, MaxPushBodySize), (text-display or					
		brow	rser) / text-plain preferable					
	Test dat	a 2: Anv d	ata for content type included in DSRC client resource					
	1050 aat	infor	mation min(1000 MaxPushBodySize) (text-display or					
		hrow	ser) / text-plain preferable					
	Test dat	a 3: Any d	ata for content type included in DSRC client resource					
	iest dat	infor	mation min(1000 MaxPushBodySize) (text-display or					
		hrow	rser) / text-nlain nreferable					
Tost	rocoduro	510						
	eonde toet (data 1 to (BE as push communication with confirmation response					
1. 10	To sends test data 1 to ODE as push communication with communication response, (1) "							
Spe 9 Aft	or transfor	is complet	ang (1).					
2. Alt		rmation of	amond "ConfirmedPushResponse"					
res איר	aonda toat	data 9 to (PE as much communication with confirmation response.					
3. 15	senus test (Jata 2 to C	The as push communication with confirmation response, (1) "					
spe	specifying "Kesponse'I'iming(1)."							

4. After transfer is complete, OBE returns push communication with confirmation

response confirmation command "ConfirmedPushResponse."

- 5. TS sends test data 3 to OBE as push communication with confirmation response, specifying "ResponseTiming(1)."
- 6. After transfer is complete, OBE returns push communication with confirmation response confirmation command "ConfirmedPushResponse."

Confirmation items

• Verify that the content execution count in steps 2, 4, 6 matches the send count.

Table 3-45 Push-type information delivery application test—Check segment/transfer communication

Tes	t	4.9 5	Item	Push-type information delivery operation		
nur	nber	4-2-5	name	Check segment/transfer communication		
Г	est ove	erview				
•	Check	segment	/transfer	communication operation of push-type information delivery		
	applic	ation.				
Т	'est cor	nditions				
	Basic	paramete	rs as liste	d in section 3.2.		
	DSRC	-LPCP/LI	PP must og	perate normally.		
	DSRC	connecti	on process	sing must be completed, and communication connection state		
	must]	have been	establish	ed.		
•	Local	port nun	nber infor	mation for push-type information delivery application must		
	have b	been exch	anged.			
•	Push-	type infor	mation de	livery application supporting segment/transfer functions must		
	be im	plemented	l in OBE.			
•	For th	e operatio	on test, us	e the following test data to be sent from TS to OBE.		
		Test data	a 1: Any d	ata for content type included in DSRC client resource		
			inform	mation (declared MaxPushBodySize x 2 octets), but not to		
			excee	d MaxContentsSize. (text-display or browser) / text-plain		
			prefe	rable.		
Т	'est pro	ocedure				
1.	TS set	nds test o	data 1 to	OBE as push communication with no confirmation response,		
	specify	ying segm	ient trans	fer "isSegment(TRUE)."		
2.	After	receiving	the first s	egment, and until the receiving last segment, OBE returns the		
	next s	egment re	equest con	nmand "NexTSegmentRequest."		
3.	TS rec	ceives nex	t segment	request command "NexTSegmentRequest" and sends next		
	segment.					
4.	Repea	t steps 1 ·	- 3 until la	ast segment.		
C	Confirm	nation iter	ms			
•	Verify that TS receives next segment request command "NexTSegmentRequest" in step					
	3.					
•	Verify	that pus	h client C	BE receives segment/transfer push communication in step 4,		
	and th	nat it mat	ches test o	lata 1.		

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Table 3-46 Push-type information delivery application test—Check push operation discard communication

Test	4-9-6	Item	Push-type information delivery operation				
number	4-2-0	name	Check push operation discard communication				
Test ov	Test overview						
• Check	x push oper	ation dis	card operation of push-type information delivery application.				
Test con	nditions						
• Basic	parameter	s as liste	d in section 3.2.				
• DSRC	C-LPCP/LP	P must og	perate normally.				
• DSRC	connectio	n proces	sing must be completed, and communication connection state				
must	have been	establish	ed.				
• Local	port numb	er inform	nation for push-type information delivery application must have				
been e	exchanged.						
• Push-	type inform	nation de	elivery application supporting segment/transfer functions must				
be im	plemented	in OBE.					
• For th	ne operation	n test, us	e the following test data to be sent from TS to OBE.				
	Test data	1: Any d	ata for content type included in DSRC client resource				
		inform	ation [declared (MaxPushBodySize x 2) octets]. Not to exceed				
		MaxCo	ontentsSize. (text-display or browser) / text-plain preferable.				
	Test data	2: Any d	ata for content type included in DSRC client resource				
		inform	ation, min(1000, MaxPushBodySize). (text-display or browser) /				
		text-pl	ain preferable.				
Test pr	ocedure						
1. TS se	ends test d	ata 1 to	OBE as push communication with no confirmation response,				
specif	ying segme	ent transf	fer "isSegment(TRUE)."				
2. After	receiving	the seg	gment, OBE returns the next segment request command				
"Nex7	SegmentR	equest."					
3. TS set	nds push d	elivery a	bort command "PushAbortOperation."				
4. TS set 4 .	nds test da	ta 2 to O	BE as push communication with confirmation response.				
5. After	5. After reception is complete, OBE returns push communication with confirmation						
response confirmation command "ConfirmedPushResponse."							
Confirm	nation item	ıs					
• Verify	that trans	fer data a	are discarded and not executed by push client at OBE content in				
step 3	step 3.						

• Verify that data received by OBE in step 5 match test data 2.

Table 3-47 Push-type information delivery application test—Check re-execute request

Test		Item	Push-type information delivery operation			
number	4-2-7	name	Check re-execute request			
Test ove	Test overview					
• Check	re-execute	e request	operation of push-type information delivery application.			
Test cor	nditions					
• Basic	parameter	s as liste	d in section 3.2.			
• DSRC	-LPCP/LP	P must oj	perate normally.			
• DSRC	connectio	n process	sing must be completed, and communication connection state			
must]	have been	establish	ed.			
• Local	port numb	er inform	ation for push-type information delivery application must have			
been e	exchanged.					
• For th	e operation	n test, us	e the following test data to be sent from TS to OBE.			
	Test data	1: Any da	ata for content type included in declared content list, min(1000,			
		MaxPu	ashBodySize). (text-display or browser) / text-plain preferable.			
Test pro	ocedure					
1. TS set	nds test da	ita 1 as p	oush communication with no confirmation response, specifying			
conter	nt data cac	hing "req	uiredCashe(TRUE)."			
2. TS se	nds test d	ata 1 as	push communication with confirmation response, specifying			
conter	nt data cacl	hing "req	uiredCashe(TRUE)" and re-push operation (Re-PushOperation)			
for the	e same Pus	hID as ir	n step 1.			
3. After	reception i	is comple	ete, OBE returns push communication confirmation command			
"Confi	rmedPush	Response				
Confirm	nation item	ıs				
• Verify	Verify that content re-executed or cached by push client at OBE in step 2 matches test					
data 1	. If not cac	hed, veri	fy that TS receives push delivery abort command			
"Push	AbortOper	ation," ai	nd that status code is (9) "No content to re-execute."			

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Table 3-48 Push-type	information	delivery a	application (test—Check	simulated	push	(option)
						T	· I · · · /

Test	4.0.1	Item	Push-type information delivery operation		
number	4-3-1	name	Check simulated push (option)		
Test ov	erview				
• Check	simulate	d push op	eration of push-type information delivery application.		
Test con	nditions				
• Basic	paramete	rs as liste	d in section 3.2.		
• DSRC	C-LPCP/LF	PP must oj	perate normally.		
• Push-	type infor	mation d	elivery application must be implemented, and DSRC client		
resou	rce inform	ation mus	t include "browser / DSRC-smart-pull(129)."		
• IP cor	nmunicati	on functio	n must be provided at OBE.		
• When	using D	SRC as I	P communication, regular IP communication must not be		
establ	lished.				
• For th	ne operatio	on test, us	e the following test data to be sent from TS to OBE.		
	Test da	ta 1: URL	for declared protocol [http] where SP (simulated push		
		conte	nt) is located.		
Test pr	ocedure				
1. Estab	lish DSRO	C connectio	on.		
2. TS re	ceives clie	ent inforn	nation notification command "ClientInformation" and sends		
test d	ata 1 as p	ush comm	unication with no confirmation response to OBE.		
3. OBE :	receives te	est data 1	and established IP communication.		
4. OBE	obtains co	ntent spec	ified by protocol in test data 1.		
Confirm	nation iter	ms			
• Verify	that clie	nt inform	ation notification command "ClientInformation" received by		
TS in	sep 2 incl	udes "brov	vser / DSRC-smart-pull(129)."		
• Verify	\cdot Verify that data received by OBE in step 3 match test data 1, and that IP				
comm	unication	is establis	shed when DSRC is used as IP communication.		
• Verify	that data	received	by OBE in step 4 is the content specified by test data 1.		

3.3.5 Test Items for OBE ID Communication Application

The items for tests related to the OBE ID communication application to be performed with the TS are listed below.

When performing the tests, the following points should be observed.

- While performing ID maintenance related tests (test numbers 5-1-1 to 5-1-5), the OBE will be in ID maintenance mode, but the TS must maintain the DSRC connection between TS and OBE without interruption.
- Delete the test purpose ID from the OBE after completing the OBE ID communication application related tests.

Table 3-49 OBE ID communication operation test—Check OBE ID registration processing

Test	F 1 1	Item	OBE ID communication operation			
number	9-1-1	name	Check OBE ID registration processing			
Test ove	Test overview					
• Check	whether (OBE ID c	an be registered in OBE.			
Test cor	nditions					
• Basic	parameter	s as liste	d in section 3.2.			
• DSRC	-LPCP/LP	P must oj	perate normally.			
• DSRC	connectio	n process	sing must be completed, and communication connection state			
must	have been	establish	ed.			
• Local	port numb	er inforn	nation for OBE ID communication application must have been			
excha	nged.					
• For th	e operation	n test, us	e the following OBE ID ID as registration data.			
	Test data	1: applIC	CationServICeProvIDer = [0x0000123456789ABC] IDCondition			
		= 0x48	00 (clear text transmission, mutual authentication not			
		requir	ed, user verification when sending not required, ID deletion			
		allowe	d) OBEID = [0x000000112233445566] (MAC-less format)			
Test pro	ocedure					
1. TS ser	nds ID setu	p reques	t command "iDSetupRequest" to OBE, using test data 1.			
2. TS receives ID setup response command "iDSetupResponse" from OBE.						
Confirm	Confirmation items					
• Verify	that data	received	by TS in step 2 match test data 1.			

Table 3-50 OBE ID communication operation test—Check OBE ID check processing

r				
Test	5-1-2	Item	OBE ID communication operation	
number	012	name	Check OBE ID check processing	
Test ov	erview			
• Check	acquirer	ID list reg	gistered in OBE.	
Test con	nditions			
• Basic	paramete	rs as liste	d in section 3.2.	
• DSRC	C-LPCP/LI	PP must of	perate normally.	
• DSRC	connectio	on process	sing must be completed, and communication connection state	
must	have been	establish	ed.	
• Local	port num	ber inform	nation for OBE ID communication application must have been	
excha	nged.			
• Test r	number 5-	1-1 must l	have been performed, and OBE ID must have been set up in	
OBE.				
Test pro	ocedure			
1. TS set	nds regist	ered ID lis	st request command "iDCheckRequest" to OBE.	
2. TS re	ceives reg	gistered I	D list request response command "iDCheckResponse" from	
OBE.	OBE.			
Confirm	nation iter	ms		
Verif	Verify that data received in step 2 match value of "applICationServICeProvIDer" in			
test data	1 of test n	umber 5-1	ŀ1.	
1				

Table 3-51 OBE ID communication operation test—Check OBE ID delete processing (normal operation)

Test	5-1-9	Item	OBE ID communication operation		
number	9-1-9	name	Check OBE ID delete processing (normal operation)		
Test ov	erview				
• Check	k that OBE	E IDs reg	sistered in OBE can be deleted in the OBE ID delete enabled		
condi	tion.				
Test co	nditions				
• Basic	parameter	rs as liste	d in section 3.2.		
· DSRC	C-LPCP/LP	P must og	perate normally.		
· DSRC	connectio	n proces	sing must be completed, and communication connection state		
must	have been	establish	ed.		
• Local	port numb	oer inform	nation for OBE ID communication application must have been		
excha	nged.				
• Test 1	number 5-1	l-1 must	have been performed, and OBE ID must have been set up in		
OBE.					
• For th	ne operation	n test, us	e the following acquirer OBE ID to be deleted.		
	Test data	2: applIC	CationServICeProvIDer = [0x0000123456789ABC]		
Test pr	ocedure				
1. TS se	nds registe	red ID de	elete request command "iDDeleteRequest" to OBE, using test		
data 2	2.				
2. TS re	ceives regi	istered II	D delete request response command "iDDeleteResponse" from		
OBE.					
3. TS se	nds registe	red ID lis	st request command "iDCheckRequest" to OBE.		
4. TS re	4. TS receives registered ID list request response command "iDCheckResponse" from OBE.				
Confirm	nation iten	ıs			
• Verify	v that data	received	by TS in step 2 match test data 2.		
1					

• Verify that data received by TS in step 4 match test data 2.

Table 3-52 OBE ID communication operation test—Check OBE ID delete processing (error operation)

Test	5-1-4	Item	OBE ID communication operation			
number	5-1-4	name	Check OBE ID delete processing (error operation)			
Test ov	Test overview					
• Checl	k that cor	rect opera	tion is performed when attempting to delete an OBE ID not			
regist	tered in O	BE.				
Test co	nditions					
• Basic	paramete	ers as liste	d in section 3.2.			
· DSRC	C-LPCP/LI	PP must og	perate normally.			
· DSRC	C connecti	on process	ing must be completed, and communication connection state			
must	have been	n establish	ed.			
• Local	port num	ber inform	ation for OBE ID communication application must have been			
excha	inged.					
• For th	he operatio	on test, us	e the following acquirer OBE ID to be deleted.			
	Test dat	a 3: applI(CationServICeProvIDer = $[0x0000CBA987654321]$			
Test pr	ocedure					
1. TS se	nds regist	ered ID de	elete request command "iDDeleteRequest" to OBE, using test			
data	data 3.					
2. TS re	2. TS receives OBE denial response command "OBEDenialResponse."					
Confirm	mation ite	ms				
• Verify	y that data	a received	by TS in step 3 indicate status 12 (no registered OBE ID).			
Table 3-53 OBE ID communication operation test—Check OBE ID condition change (at OBE)

Test		Item	OBE ID communication operation							
number	5 - 1 - 5	name	Check OBE ID condition change (at OBE)							
Test ov	Test overview									
Verify	v that condi	tion of re	gistered OBE ID can be changed.							
Test co	nditions									
Basic	parameter	s as liste	d in section 3.2.							
· DSR(C-LPCP/LP	P must or	perate normally.							
· DSRO	C connectio	n process	sing must be completed, and communication connection state							
must	have been	establish	ed.							
• Local	port numb	er inforn	nation for OBE ID communication application must have been							
excha	inged.									
• For t	ne operation	n test, us	e the following data for the ID condition change.							
	Test data 4	4: applIC	ationServICeProvIDer = [0x0000123456789ABC]							
		IDCon	dition = 0x4000 (clear text transmission, mutual authentication							
		not rec	quired, user verification when sending not required, ID deletion							
		not all	owed)							
Test pr	ocedure									
1. Perfo	rm test nur	nber 5-1-	1 and set up an OBE ID in the OBE with deletion allowed.							
2. TS se	ends ID con	dition ch	ange request command "iDConditionChangeRequest" to OBE,							
with	test data 4	as send d	ata, to set condition of registered OBE ID to delete not allowed.							
3. TS re	ceives ID c	ondition o	change request response command							
"iDCo	onditionCha	angeResp	onse" from OBE.							
4. TS se	ends registe	ered ID d	elete request command "iDDeleteRequest" to OBE, using test							
data	2 of test nu	mber 5-1	-3.							
5. TS re	ceives OBE	denial r	esponse command "OBEDenialResponse."							
6. Perfo	rm test nur	nber 5-1-	2. TS receives Check acquirer ID list registered in OBE.							
Confirm	nation item	ns								
• Verify	v that data	received	by TS in step 3 match test data 4.							
• Verify	v that statu	is of data	received by TS in step 5 is 11 (maintenance command failed),							
indica	ating that t	arget OB	E ID condition was changed to delete not allowed.							
• Verify	Verify that data received in step 6 match value of "applICationServICeProvIDer" in test									
data	data 2 of test number 5-1-3.									

Table 3-54 OBE ID communication operation test—Check OBE ID acquiry processing (normal operation)

Test		Item	OBE ID communication operation		
number	5-2-1	name	Check OBE ID acquiry processing (normal operation)		
Test ov	erview				
• Check	whether	TS can ge	t OBE ID from OBE under correct conditions.		
Test con	nditions				
• Basic	paramete	rs as liste	d in section 3.2.		
· DSRC	C-LPCP/LI	PP must og	perate normally.		
· DSRC	connection	on process	sing must be completed, and communication connection state		
must	have been	ı establish	ed.		
• Local	port num	ber inform	nation for OBE ID communication application must have been		
excha	nged.				
• Test r	number 5-	1-1 must	have been performed, and OBE ID must have been set up in		
OBE.					
Havi	ng OBE II	D in delete	e not allowed condition as after performing test number 5-1-5		
is als	o permiss	ible.			
Test pr	ocedure				
1. TS se	nds first	ID reques	t command "firstIDRequest" to OBE, using test data 2 test		
numb	er 5-1-3 a	s send dat	a.		
2. TS re	2. TS receives first ID request response command "firstIDResponse" from OBE.				
Confirm	nation iter	ms			
• Verify	• Verify that data received by TS in step 2 match OBE ID in test data 1 of test number				
5-1-1.	5-1-1.				

Table 3-55 OBE ID communication operation test—Check OBE ID acquiry processing (error operation 1)

Test	F -9-9-1	Item	OBE ID communication operation						
number	0-2-2-1	name	Check OBE ID acquiry processing (error operation 1)						
Test ove	Test overview								
• Check	that corre	ect operat	tion is performed when TS attempts to acquire an OBE ID not						
regist	ered in the	OBE.							
Test cor	nditions								
• Basic	parameter	s as liste	d in section 3.2.						
• DSRC	-LPCP/LP	P must oj	perate normally.						
• DSRC	connectio	n process	sing must be completed, and communication connection state						
must	have been	establish	ed.						
• Local	port numb	er inforn	nation for OBE ID communication application must have been						
excha	nged.								
Test pro	ocedure								
1. TS set	nds first I	D reques	t command "firstIDRequest" to OBE, using test data 3 of test						
numb	mber 5-1-4 as send data.								
2. TS red	2. TS receives OBE denial response command "OBEDenialResponse."								
Confirm	Confirmation items								
• Verify	• Verify that data received by TS in step 2 indicate status 2 (no registered OBE ID).								

Table 3-56 OBE ID communication operation test—Check OBE ID acquiry processing (error operation 2)

Test	F -9-9-9	Item	OBE ID communication operation					
numb	er 5-2-2-2	name	Check OBE ID acquiry processing (error operation 2)					
Test	Test overview							
· Cl	heck that OF	E ID that	requires encrypted sending cannot be read as clear text.					
Tes	t conditions							
• Ba	asic paramet	ers as liste	d in section 3.2.					
• D\$	SRC-LPCP/L	PP must o	perate normally.					
• D\$	SRC connect	ion process	sing must be completed, and communication connection state					
m	ust have bee	n establish	led.					
• Lo	ocal port nun	nber inforn	nation for OBE ID communication application must have been					
ex	changed.							
• Te	est number 5	-1-1 must	have been performed, and OBE ID must have been set up in					
0	BE. Having	OBE ID in	delete not allowed condition as after performing test number					
5-	1-5 is also pe	rmissible.						
• Fo	or the operat	ion test, us	e the following data for the ID status change.					
	Test da	ta 5: applI	CationServICeProvIDer = [0x0000123456789ABC]					
		IDCo	ondition = 0x8800 (encrypted transmission, mutual					
		auth	entication not required, user verification when sending not					
		requi	ired, ID deletion allowed)					
Test	t procedure							
1. TS	S sends ID s	tatus chai	nge request command "iDConditionChangeRequest" to OBE,					
wi	ith test data	a 5 as sei	nd data, to set status of registered OBE ID to encrypted					
tra	ansmission.							
2. TS	S receive	s ID	status change request response command					
"il	DConditionC	hangeResp	oonse" from OBE.					
3. TS	S sends first	ID reques	t command "firstIDR equest" to OBE, using test data $2 \mbox{ of test}$					
nı	number 5-1-3 as send data.							
4. TS	4. TS receives OBE denial response command "OBEDenialResponse."							
Con	firmation ite	ems						
• Ve	erify that dat	a received	by TS in step 2 match test data 5.					
· Ve	• Verify that data received by TS in step 4 indicate status 32 (clear text transmission							
in	inhibited).							

3.3.6 Test Procedure for OBE Basic Indication Application

The items for tests related to the OBE basic indication application to be performed with the TS are listed below.

Table 3-57 OBE basic indication operation test—Check communication result notification (normal end)

Test	6-1-1	Item	OBE basic indication operation			
number		name	Check communication result notification (normal end)			
Test ove	erview					
• Check	communio	cation res	ult notification operation.			
Test con	nditions					
• Basic	parameter	s as liste	d in section 3.2.			
• DSRC	-LPCP/LP	P must oj	perate normally.			
• DSRC	connectio	n process	sing must be completed, and communication connection state			
must	have been	establish	ed.			
• Local	port num	ber infor	mation for OBE basic indication application must have been			
excha	nged.					
Test pro	ocedure					
1. As OBI	E instructio	on inform	ation, TS sends OBE indication notification command			
"bOII	Request" in	cluding "	transactionResult(0)" to OBE.			
2. OBE se	nds basic i	indication	n response command "bOIResponse" as response to OBE			
instru	instruction information.					
Confirm	Confirmation items					
• Verify	• Verify that "transactionResult" at OBE is (0), "Service normal end, no charge."					
• Verify	• Verify that TS receives OBE basic indication response command "bOIResponse."					

Table 3-58 OBE basic indication operation test—Check communication result notification (abnormal end)

	1	1				
Test	6-1-2	Item	OBE basic indication operation			
number		name	Check communication result notification (abnormal end)			
Test ove	erview					
• Check	commun	ication res	sult notification operation.			
Test con	nditions					
• Basic	paramete	rs as liste	d in section 3.2.			
• DSRC	-LPCP/LI	PP must of	perate normally.			
• DSRC	connectio	on process	sing must be completed, and communication connection state			
must	have been	establish	ed.			
• Local	port num	ber inforr	nation for OBE basic indication application must have been			
excha	nged.					
Test pro	ocedure					
1. As OI	BE instru	ction info	ormation, TS sends OBE indication notification command			
"bOIR	equest" in	cluding "t	ransactionResult(64)" to OBE.			
2. OBE s	sends bas	ic indicat	ion response command "bOIResponse" as response to OBE			
instru	instruction information.					
Confirm	Confirmation items					
• Verify	• Verify that "transactionResult" at OBE is (64), "Service abnormal end."					
• Verify	Verify that TS receives OBE basic indication response command "bOIResponse."					

Table 3-59 OBE basic indication operation test—Check communication result and charge notification

Test	0.1.0	Item	OBE basic indication operation					
number	6-1-3	name	Check communication result and charge notification					
Test ove	Test overview							
• Check	communic	cation res	sult notification operation and charge notification operation.					
Test con	nditions							
• Basic	parameter	s as liste	d in section 3.2.					
• DSRC	-LPCP/LP	P must oj	perate normally.					
· DSRC	connectio	n process	sing must be completed, and communication connection state					
must	have been	establish	ed.					
• Local	port num	ber infor	mation for OBE basic indication application must have been					
excha	nged.							
• For th	ne operation	n test, us	e the following data as "amount" parameter value.					
	Test data	1: any ai	nount information [3 bytes]					
Test pro	ocedure							
1. As OI	BE instruct	tion infor	mation, TS sends OBE basic indication notification command					
"bOIR	lequest" ind	cluding "f	transactionResult(128), amount (test data 1)" to OBE.					
2. OBE	sends basi	ic indica	tion response command "bOIResponse" as response to OBE					
instru	iction infor	mation.						
Confirm	nation item	ıs						
• Verify	• Verify that "transactionResult" at OBE is (128), "Service normal end, with charge," and							
that "	that "amount" value matches test data 1.							
• Verify	• Verify that TS receives OBE basic indication response command "bOIResponse."							

Table 3-60 OBE basic indication operation test—Check time notification

Test	6-9-1	Item	OBE basic indication operation					
number	021	name	Check time notification					
Test ov	Test overview							
• Chec	k time not	ification o	peration.					
Test co	nditions							
• Basic	e paramete	ers as liste	d in section 3.2.					
· DSR	C-LPCP/L	PP must o	perate normally.					
· DSR	C connecti	on process	sing must be completed, and communication connection state					
must	have been	n establish	ed.					
• Local	port nun	nber infori	nation for OBE basic indication application must have been					
excha	anged.							
• For t	he operati	on test, us	e the following data as "time" parameter value.					
	Test dat	a 1: any ti	me information [4 bytes]					
Test pr	rocedure							
1. As O	BE instru	ction infor	mation, TS sends OBE basic indication notification command					
"bOII	Request" i	ncluding "	transactionResult(0), time (test data 1)" to OBE.					
2. OBE	sends ba	sic indicat	tion response command "bOIResponse" as response to OBE					
instr	instruction information.							
Confir	mation ite	ms						
• Verif	• Verify that "transactionResult" at OBE is (0). "Service normal end with charge" and							
that	that "time" value matches test data 1.							
• Verif	Verify that TS receives OBE basic indication response command "bOIResponse."							

Annex

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Annex 1 Tests Related to DSRC Security Platform (SPF) Interface Specifications

The interoperability confirmation testing steps for the DSRC-SPF interface are listed below.

Annex 1.1 Tests Related to Authentication and Key Exchange Phase

The tests related to the authentication and key exchange phase are as follows.

Annex Table 1-1 DSRC-SPF operation tests—Check normal processing in authentication / key exchange phase

Test		Itom	DSRC-SPF operation							
	S-1-1	Item	Check normal processing in authentication / key exchange							
number		name	phase							
Test ov	Test overview									
• Chec	k normal pr	ocessing	in authentication / key exchange phase.							
Test co	nditions									
• Basic	parameter	s as liste	d in section 3.2.							
· DSRO	C-SPF setur	o in OBE	must be completed.							
· DSRO	C-LPCP/LP	P must o	perate normally.							
· DSRO	C connectio	n proces	sing must be completed, and communication connection state							
must	have been	establish	ed.							
· DSR0	C-SPF man	agement	port number information must have been exchanged.							
• A sec	• A security type supported by OBE must be used for operation test.									
Test pr	Test procedure									
1. TS s	ends auther	ntication	negotiate request command "NegotiateRequest" to OBE.							
2. OBE	returns aut	henticati	on negotiate response command "NegotiateResponse" to TS.							
3. TS s	ends auther	ntication	/ key exchange command along with "SetupMessageRequest" to							
OBE										
4. OBE	returns	authe	entication / key exchange command along with							
"Setu	ıpMessagel	Response	" to OBE.							
5. Step	5. Steps 3 and 4 are repeated until authentication / key exchange sequence is completed.									
Confirm	Confirmation items									
• Verify	v that autho	entication	n and key exchange are completed normally after step 5.							

Annex Table 1-2 DSRC-SPF operation tests—Check operation in case of security type error

Test		Thoma	DSBC-SDE anomation			
Test	S-1-2	nem	DSRU-SPF operation			
number	~	name	Check operation in case of security type error			
Test ov	erview					
• Check	x operation	n when un	supported security type is specified.			
Test co	nditions					
• Basic	paramete	rs as liste	d in section 3.2.			
· DSRC	C-SPF setu	ıp in OBE	must be completed.			
· DSRC	C-LPCP/LI	PP must of	perate normally.			
· DSRC	connection	on process	ing must be completed, and communication connection state			
must	have been	establish	ed.			
· DSRC	C-SPF mar	nagement	port number information must have been exchanged.			
• A secu	arity type	not suppo	rted by OBE must be used for operation test.			
Test pr	st procedure					
1. TS se	ends authentication negotiate request command "NegotiateRequest" to OBE.					
2. TS re	2. TS returns authentication failure indication to OBE.					
Confirm	Confirmation items					
• Verify	Verify that OBE properly notifies TS of authentication failure.					

Annex Table 1-3 DSRC-SPF operation tests—Check reauthentication operation in case of authentication failure

Tes	t	S -1-3	Item	DSRC-SPF operation						
nui	number	515	name	failure						
Г	Test overview									
	Check	whether r	eauthen	tication is possible after an authentication failure.						
Г	est cor	nditions								
	Basic	parameter	s as liste	d in section 3.2.						
	DSRC	SPF setu	p in OBE	must be completed.						
•	DSRC	-LPCP/LP	P must og	perate normally.						
•	DSRC	connectio	n proces	sing must be completed, and communication connection state						
	must]	have been	establish	ed.						
•	DSRC	SPF man	agement	port number information must have been exchanged.						
•	A secu	urity type s	upported	l by OBE must be used for operation test.						
•	Wrong	g content i	nust be	used for authentication / key exchange command in step 3 of						
	operat	tion test.								
Г	lest pro	ocedure								
1.	TS se	nds auther	ntication	negotiate request command "NegotiateRequest" to OBE.						
2.	OBE	returns aut	thenticati	on negotiate response command "NegotiateResponse" to TS.						
3.	TS se	nds auther	ntication	/ key exchange command along with "SetupMessageRequest" to						
	OBE.									
4.	TS re	turns auth	enticatio	on failure indication to OBE.						
5.	TS se	nds auther	ntication	negotiate request command "NegotiateRequest" to OBE.						
6.	OBE	returns aut	thenticati	on negotiate response command "NegotiateResponse" to TS.						
7.	TS se	nds auther	ntication	/ key exchange command along with "SetupMessageRequest" to						
	OBE.									
8.	OBE	returns au	thenticat	tion / key exchange command along with						
	"SetupMessageResponse" to OBE.									
9.	Steps	7 and 8 ai	e repeat	ed until authentication / key exchange sequence is completed.						
0	Confirm	nation item	18							
•	Verify that OBE properly notifies TS of authentication failure in step 4.									
•	Verify that authentication and key exchange are completed normally after step 9.									

Annex Table 1-4 DSRC-SPF operation tests—Check reauthentication operation after successful authentication

т.	- 4		The sec	DSRC-SPF operation					
Te	number	S-1-4	Item	Check reauthentication operation after successful					
nu			name	authentication					
r	Test overview								
•	Check	whether	reauthen	tication is possible after a successful authentication.					
r	Test con	nditions							
•	Basic	paramete	rs as liste	d in section 3.2.					
•	DSRC	SPF setu	ıp in OBE	must be completed.					
•	DSRC	-LPCP/LI	PP must o	perate normally.					
•	DSRC	connection	on process	sing must be completed, and communication connection state					
	must	have been	establish	ed.					
•	DSRC	SPF mar	nagement	port number information must have been exchanged.					
•	A secu	arity type	supported	l by OBE must be used for operation test.					
r	Test pro	ocedure							
1.	TS se	nds authe	ntication n	egotiate request command "NegotiateRequest" to OBE.					
2.	OBE	returns a	uthentica	tion negotiate response command "NegotiateResponse" to TS.					
3.	TS sends authentication / key exchange command along with "SetupMessageRequest"								
	to OF	BE.							
4.	OBE	returns a	uthentica	tion / key exchange command along with					
	"Setu	pMessage	Response	" to OBE.					
5.	Steps	s 3 and 4 a	are repeat	ed until authentication / key exchange sequence is completed.					
6.	TS se	ends authe	entication	negotiate request command "NegotiateRequest" to OBE.					
7.	OBE	returns a	uthentica	tion negotiate response command "NegotiateResponse" to TS.					
8.	TS se	ends autho	entication	/ key exchange command along with "SetupMessageRequest"					
	to OF	BE.							
9.	OBE	returns a	uthentica	tion / key exchange command along with					
	"Setu	pMessage	Response	" to OBE.					
10	10. Steps 8 and 9 are repeated until authentication / key exchange sequence is completed.								
	Confirn	nation iter	ms						
•	• Verify that authentication and key exchange are completed normally after step 5.								
•	Verify that authentication and key exchange are completed normally after step 10.								

Annex 1.2 Tests Related to Service Session Phase

The tests related to the service session phase are as follows.

Annex Table 1-5 DSRC-SPF operation tests—Check normal processing in service session phase

Teat	1	Itom	DCPC-CDF operation			
numbor	S-2-1	nemo	Check normal processing in convice session phase			
Thest exemption						
Check that application data can be normally cant and received via a converse part often						
• Check that application data can be normally sent and received via a secure port after						
These conditions						
Basia parameters as listed in section 2.2						
Dasic parameters as listed in section 5.2. Dependence of the completed						
DSRC-SFF setup in ODE must be completed. DSRC-I PCP/I PP must energe to normally.						
• DSRC In CIVILI I must operate normality.						
must have been established						
DSRC-SPF management part number information must have been exchanged						
• DSRC-SPF authentication / key exchange must have completed successfully. If not						
nerform test number S-1-1						
Secur	e port nu	mber in	formation for IC card access application must have been			
excha	nged.					
• IC car	• IC card for testing must be set in OBE.					
Test procedure						
1. As IC	1. As IC card access application start request. TS sends application start request command					
"initI	"initRequest" to OBE via secure port.					
2. OBE	2. OBE returns application start response command "initResponse" via secure port as					
respo	response to IC card access application start request.					
3. As ap	As application end request, TS sends IC card access application end request command					
"endI	"endRequest" to OBE via secure port.					
4. OBE	BE returns application end response command "endResponse" via secure port as					
respo	response to IC card access application end request.					
Confirmation items						
• Verify	• Verify that TS receives application start response command "initResponse" in step 2,					
including ATR information for test IC card.						
• Verify	\cdot Verify that TS receives application end response command "endResponse" in step 4 and					
that o	peration er	nds norm	ally.			

Annex Table 1-6 DSRC-SPF operation tests—Check secure port operation when authentication is not completed

Test number	S-2-2	Item name	DSRC-SPF operation				
			Check secure port operation when authentication is not				
			completed				
Test ov	Test overview						
• Check that secure port cannot be used when authentication has not been completed.							
Test conditions							
• Basic parameters as listed in section 3.2.							
DSRC-SPF setup in OBE must be completed.							
DSRC-LPCP/LPP must operate normally.							
• DSRC connection processing must be completed, and communication connection state							
must have been established.							
• DSRC-SPF management port number information must have been exchanged.							
• Secu	• Secure port number information for IC card access application must have been						
exchanged.							
• IC card for testing must be set in OBE.							
Test procedure							
1. TS sends authentication negotiate request command "NegotiateRequest" to OBE.							
2. OBE	OBE returns authentication negotiate response command "NegotiateResponse" to TS.						
3. As 1	. As IC card access application start request, TS sends application start request						
com	command "initRequest" to OBE via secure port.						
4. OBE	OBE returns command to TS indicating that access to secure port of IC card access						
appl	application is not available.						
Confirmation items							
• Verif	• Verify that in step 4, OBE returns command to TS indicating that access to secure port						
of IC	of IC card access application is not available.						

DEDICATED SHORT-RANGE COMMUNICATION (DSRC) BASIC APPLICATION INTERFACE TEST ITEMS AND CONDITIONS FOR LAND MOBILE STATION COMPATIBILITY CONFIRMATION

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