

MTP LEVEL 3
TEST NUMBER: 7.5
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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Inhibition asked by the both ends of a link

PURPOSE: To check the action of the system on reception of an LIN after sending of an LIN

PRE-TEST CONDITIONS: Linkset with two available links

CONFIGURATION: A
TYPE OF TEST: VAT
TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 - 1, 2 TRAFFIC
----->

<-----
1 – 1, 2 TRAFFIC

1 – 1 :Request inhibition

1 – X LIN, SLC 1 – 1
----->

<-----
1 – X LIN, SLC 1 – 1

1 – 1 LIA, SLC 1 – 1
----->

<-----
1 – X LIA, SLC 1 – 1

TIME-CONTROLLED CHANGEOVER (see note)

1 – 2 TRAFFIC (from 1 – 1)
----->

<-----
1 – 2 TRAFFIC (from 1 – 1)

:Wait

:Stop traffic

Note – A changeover procedure is performed but not described in this inhibition test.

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 1 and 1 – 2.
2.
Request inhibition of link 1 – 1. Check the reception of LIN and response with an LIN.
3.
Check the reception of an LIA and send an LIA.
4.
Check that the inhibition is correctly performed and that the link enters in the «Local and remote inhibiting» state.
5.
Stop traffic and check that it was not disturbed.

MTP LEVEL 3
TEST NUMBER: 7.6.1
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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Manual uninhibition of a link – with changeback

PURPOSE: To check for correct restoration when link uninhibition is requested by an operator

PRE-TEST CONDITIONS: End of test 7.1.1

CONFIGURATION: A
TYPE OF TEST: VAT, CPT
TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 - 2 TRAFFIC
----->

<-----
1 - 2 TRAFFIC

1 - 1 :Request uninhibition

1 - 2 LUN, SLC 1-1
----->

<-----
1 - 2 LUA, SLC 1 - 1

CHANGEBACK (See note)
CHANGEBACK (See note)

1 – 1 TRAFFIC (from 1 – 2)
----->

<-----
1 – 1 TRAFFIC (from 1 – 2)

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

:Wait

:Stop traffic

Note – A changeback procedure is performed after uninhibition of link 1 – 1 but it is not described in this test which checks only uninhibition procedure.

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 2.
2.
Request uninhibition of link 1 – 1, check the reception of an LUN and response with an LUA inside T12.

3.

Check that the uninhibition is performed and stop traffic.

4.

Check that the traffic was shared on links 1 – 1 and 1 – 2 according to the load sharing rules.

5.

Check that an uninhibition indication was given by the system.

6.

When B has initiated inhibition (point 5, test 7.1.1), repeat test in reverse direction. Check that uninhibition is not possible when it is requested by an operation in A.

MTP LEVEL 3

TEST NUMBER: 7.6.2

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Manual uninhibition of a link – without changeback

PURPOSE: To check manual uninhibition procedure when the uninhibited link stays unavailable

PRE-TEST CONDITIONS: End of test 7.1.2 without activation of link 1 – 2 (link 1 – 2 deactivated and inhibited)

CONFIGURATION: A

TYPE OF TEST: VAT, CPT
TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

1 – 2 :Request uninhibition

1 – 1 LUN, SLC 1 – 2
----->

<-----
1 – 1 LUA, SLC 1 – 2

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

:Wait

:Stop traffic

TEST DESCRIPTION

1.
Start traffic B (and C in VAT) on link 1 – 1.

2.
Request uninhibition of link 1 – 2 and check that an LUN is received and that an LUA is sent in response inside T12.

3.
Check that uninhibition is performed correctly and that link 1 – 2 stays unavailable.

4.
Stop traffic and check that it was not disturbed.

5.
When B has initiated inhibition (point 6, test 7.1.2), repeat test in reverse direction. Check that uninhibition is not possible when it is requested by an operator in A.

REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Expiration of T12

PURPOSE: To check uninhibition procedure on expiration of time T12

PRE-TEST CONDITIONS: End of test 7.1.1 (1 – 1 inhibited by A)

CONFIGURATION: A

TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

1 – 1 :Request uninhibition

1 – 2 LUN, SLC 1 – 1
----->

½
½ T12
½

1 – 2 LUN, SLC 1 – 1
----->

<-----
1 – 2 LUA, SLC 1 – 1

CHANGEBACK (See note)
CHANGEBACK (See note)

1 – 1 TRAFFIC (from 1 – 2)
----->

<-----
1 – 1 TRAFFIC (from 1 – 2)

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

:Wait

:Stop traffic

Note – A changeback procedure is performed but not described in this uninhibition test.

TEST DESCRIPTION

1.

Start traffic B and C on link 1 – 2.

2.

Request uninhibition of link 1 – 1 and check that an LUN is received.

3.

Check that after expiration of T12, a new LUN is received and acknowledged by an LUA.

4.

Check that uninhibition is performed correctly.

5.

Stop traffic and check it was shared on links 1 – 1 and 1 – 2 according with the load sharing rules and that it was not disturbed.

6.

Repeat the test but without sending of an LUA. Check that after the second expiration of T12 the procedure is stopped and an indication is given to the management.

7.

Check that the duration of T12 is inside the specified range.

TEST NUMBER:7.8

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Not possible uninhibition

PURPOSE: To check the actions of the system when the uninhibition is not possible

PRE-TEST CONDITIONS: Link 1 – 2 unavailable and inhibited and link 1 – 1 available

CONFIGURATION: A

TYPE OF TEST:VAT, CPT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

1 – 1 :Deactivate

1 – X :Request uninhibition

TEST DESCRIPTION

1.
Deactivate link 1 – 1.
2.
Check that uninhibition is not performed.

MTP LEVEL 3
TEST NUMBER: 7.9
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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Automatic uninhibition of a link

PURPOSE: To check that the system performs uninhibition procedure when a point becomes unaccessible

PRE-TEST CONDITIONS: End of test 7.1.1

CONFIGURATION: A
TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

1 – 2 :Deactivate (failure)

1 – 1 LUN, SLC 1 – 1
----->

<-----
1 – 1 LUA, SLC 1 – 1

POINT RESTART PROCEDURE IS APPLIED IN A AND B (see note)

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

:Wait

:Stop traffic

Note – When link 1–1 becomes available, point restart procedure is applied in A and B but it is not described in this inhibition test to simplify the test description.

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 2.

2.
Deactivate link 1 – 2 and check that an LUN is received on link 1 – 1 and response with an LUA within T12.

3.
Check that uninhibition is performed and that the traffic is restarted on link 1 – 1 (see note).

4.
Stop traffic, some messages have been lost.

5.
Repeat the test but without sending of an LUA. Check that after the second expiration of T12 the procedure is stopped, an indication is given to the OMAP and the link 1 – 1 does not carry traffic.

MTP LEVEL 3
TEST NUMBER: 7.10.1
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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Forced uninhibition of a link – sending of an LFU

PURPOSE: To check forced uninhibition procedure when a point becomes inaccessible

PRE-TEST CONDITIONS: Link 1 – 1 available, link 1 – 2 inhibited by B

CONFIGURATION: A

TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

1 – 1 :Deactivate (failure)

1 – 2 LFU, SLC 1 – 2
----->

<-----
1 – 2 LUN, SLC 1 – 2

1 – 2 LUA, SLC 1 – 2
----->

POINT RESTART PROCEDURE IS APPLIED IN A AND B (see note)

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

:Wait

:Stop traffic

Note – When link 1 – 2 becomes available, point restart procedure is applied in A and B but it is not described in this inhibition test to simplify the test description.

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 1.
2.
Deactivate link 1 – 1 and check the reception of an LFU on link 1 – 2. Response by an LUN. Check that T13 is stopped and that an LUA is received.

3.

Check that uninhibition is performed and that the traffic is restarted on link 1 – 2 (see note).

4.

Stop traffic, some messages have been lost.

MTP LEVEL 3

TEST NUMBER: 7.10.2

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Forced uninhibition of a link – reception of an LFU

PURPOSE: To check uninhibition procedure on reception of an LFU

PRE-TEST CONDITIONS: Link 1 – 1 available, link 1 – 2 inhibited by A

CONFIGURATION: A

TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE::

SP A

SP B

Link

Link

:Start traffic

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

<-----
1 – 2 LFU, SLC 1 – 2

1 – 1 LUN, SLC 1 – 2
----->

<-----
1 – 1 LUA, SLC 1 – 2

CHANGEBACK (see note)

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

1 – 1 TRAFFIC
----->

<-----

1 – 2 TRAFFIC

:Wait

:Stop traffic

Note – A changeback is performed but not described in this uninhibition test.

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 1.
2.
Send an LFU to A on link 1 – 2 and check that an LUN is received within T13 and acknowledged by an LUA inside T12.
3.
Check that the uninhibition is performed.
4.
Stop traffic and check that it was carried on 1 – 1 and 1 – 2.

REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Expiration of T13

PURPOSE: To check uninhibition procedure when T13 expires

PRE-TEST CONDITIONS: Link 1 – 1 available and link 1 – 2 inhibited by B

CONFIGURATION: A

TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 1 TRAFFIC
----->

<-----
1 – 1 TRAFFIC

1 – 1 :Deactivate (failure)

1 – 2 LFU, SLC 1 – 2
----->

½
½ T13
½

1 – 2 LFU, SLC 1 – 2
----->

<-----
1 – 2 LUN, SLC 1 – 2

1 – 2 LUA, SLC 1 – 2
----->

POINT RESTART PROCEDURE IS APPLIED IN A AND B (see note in 7.9)

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

:Wait

:Stop traffic

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 1.

2.
Deactivate link 1 – 1 and check the reception of an LFU. After T13 expires, check the reception of a second LFU and send an LUN. Check the reception of an LUA.

3.
Check that uninhibition is performed correctly.

4.
Stop traffic and check that it has been restarted on link 1 – 2. Some messages have been lost.

5.
Repeat the test but without sending an LUN. Check that after the second expiration of T13 the procedure is stopped, that an indication is given to the OMAP and that the link 1 – 2 carries traffic normally from A.

6.
Check that the duration of T13 is inside the specified range.

MTP LEVEL 3
TEST NUMBER: 7.12

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Additionnal uninhibition messages (LUA, LUN, LFU)

PURPOSE: To check the actions of the system on reception of an additional LUA, LUN or LFU

PRE-TEST CONDITIONS: Linkset with two available links

CONFIGURATION: A

TYPE OF TEST: VAT

TYPE OF SP: ALL

MESSAGE SEQUENCE:

PS A

PS B

Link

Link

:Start traffic

1 - 1, 2 TRAFFIC
----->

<-----
1 - 1, 2 TRAFFIC

<-----
1 - 2 LUA, SLC 1 - 1

1 - 1, 2 TRAFFIC
----->

<-----
1 – 1, 2 TRAFFIC

1 – X LUA, SLC 1 – 1
----->

1 – 1, 2 TRAFFIC
----->

<-----
1 – 1, 2 TRAFFIC

<-----
1 – 2 LFU, SLC 1 – 1

1 – X LUN, SLC 1 – 1
----->

:Wait

:Stop traffic

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 1 and 1 – 2.
2.
Send an LUA (SLC 1 – 1) on link 1 – 2.
- 3.

Check that this message has been ignored without impact on the traffic.

4.
Send an LUN (SLC 1 – 1) on link 1 – 2.

5.
Check that an LUA is received in response without impact on the traffic.

6.
Send an LUA (SLC 1 – 1) on link 1 – 2.

7.
Check that an LUN is received in response without impact on the traffic.

8.
Stop traffic.

MTP LEVEL 3
TEST NUMBER: 7.13

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Uninhibition at one side after test 7.5

PURPOSE: To check uninhibition procedure when the inhibition has been asked by the two ends of a link

PRE-TEST CONDITIONS: End of test 7.5

CONFIGURATION: A
TYPE OF TEST: VAT
TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

1 – 1 :Request uninhibition

1 – 2 LUN, SLC 1 – 1
----->

<-----
1 – 2 LUA, SLC 1 – 1

1 – 2 TRAFFIC
----->

<-----
1 – 2 TRAFFIC

:Wait

:Stop traffic

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 2.
2.
Request uninhibition of link 1 – 1. Check that an LUN is received and response with an LUA within T12.
3.
Check that the link stays inhibited (by B).
4.
Stop traffic and check that it was not disturbed.
5.
Repeat test in reverse direction.

MTP LEVEL 3
TEST NUMBER: 7.14

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REFERENCE: Q.704 § 10, Fig. 28

TITLE: Management inhibiting

SUB TITLE: Automatic uninhibition after test 7.5

PURPOSE: To check automatic uninhibition of a link when the inhibition has been initiated by the both ends

PRE-TEST CONDITIONS: End of test 7.5

CONFIGURATION: A
TYPE OF TEST: VAT
TYPE OF SP: ALL

MESSAGE SEQUENCE:

SP A

SP B

Link

Link

:Start traffic

1 – 2 TRAFFIC

----->

<-----

1 – 2 TRAFFIC

1 – 2 :Deactivate (failure)

1 – 1 LFU, SLC 1 – 1

----->

<-----

1 – 1 LFU, SLC 1 – 1

<-----

1 – 1 LUN, SLC 1 – 1

1 – 1 LUN, SLC 1 – 1

----->

1 – 1 LUA, SLC 1 – 1

----->

<-----

1 – 1 LUA, SLC 1 – 1

POINT RESTART PROCEDURE IS APPLIED IN A AND B (see note in 7.9)

1 – 1 TRAFFIC

----->

<-----
1 – 1 TRAFFIC

:Wait

:Stop traffic

TEST DESCRIPTION

1.
Start traffic to B and C on link 1 – 2.
2.
Deactivate link 1 – 2 and check that forced uninhibition is requested by the both ends which send LFU.
3.
Check that LUNs are sent by both ends in response and that LUAs are sent for acknowledgement.
4.
Check that the traffic is restarted on link 1 – 1 and stop traffic.