5i’

H.T. [T47.781]
MTP LEVEL 2

TEST NUMBER: 3.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3, 8
STD: Fig. 8
}	

TITLE: Transmission failure	

{
SUB TITLE: Link aligned not ready (Corrupt FIBs — Basic)
}	

{
PURPOSE:
To check the response to a link failure after corruption of two FIBs — detected by reception control — while in ‘‘Aligned not ready’’
}	

{
PRE-TEST CONDITIONS: Link out of service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	SIOS
1 — 0	SIOS	---------->		
				: | et LPO
				: | tart
		<----------	1 — 0	SIO
1 — 0	SIO	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
		<----------	1 — 0	SIPO
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
		<----------	1 — 0	SIOS

TEST DESCRIPTION

1.	Set LPO at A.
2.	Start link alignment at A.
3.	{
Send two corrupt FISUs (corrupt FIBs) on link aligned not ready.	
}	
4.	{
Check link is taken out of service at A.	
}	

Tableau [T47.781], p.

H.T. [T48.781]
MTP LEVEL 2

TEST NUMBER: 3.5	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 4, 10.2
STD: Fig. 8
}	

TITLE: Transmission failure	

{
SUB TITLE: Link in service (Break Tx
path)
}	

{
PURPOSE:
To test the response to a transmission failure when
the link is ‘‘In service’’
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT, CPT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}				

	SP B			SP A
Link 1 — 0	 FISU : break Tx	<---------- ----------> <----------	Link 1 — 0 SIOS	FISU
TEST DESCRIPTION				

1. Break Tx at B, check SIOS returned from A. }	{
2.	Repeat test, break at A.

Tableau [T48.781], p.

H.T. [T49.781]
MTP LEVEL 2

TEST NUMBER: 3.6	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 8
}	

TITLE: Transmission failure	

{
SUB TITLE: Link in service (Corrupt FIBs —
Basic)
}	

{
PURPOSE:
To check the response to a link failure after corruption
of two FIBS — detected by reception control — while
‘‘In service’’
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU (FIB+FISN=FF)	---------->		
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
		<----------	1 — 0	SIOS
TEST DESCRIPTION				

1. Check that receipt of two FISUs at A with corrupt FIBs at link in service state causes the link to be taken out of service. }	{

Tableau [T49.781], p.

H.T. [T50.781]
MTP LEVEL 2

TEST NUMBER: 3.7	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 8, 10.2
STD: Fig. 8
}	

TITLE: Transmission failure	

{
SUB TITLE: Link in processor outage (Break Tx path)
}	

{
PURPOSE:
To test the response to a transmission failure when the link is ‘‘Processor outage’’
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
				: | et LPO
		<----------	1 — 0	SIPO
	: break Tx			
		<----------	1 — 0	SIOS

TEST DESCRIPTION	
1. Break Tx path at B when in ‘‘Processor outage’’ state, check that the SUERM detects the failure and the link is taken out of service. }	{
2.	Repeat test, break TX at A.

Tableau [T50.781], p.

H.T. [T51.781]
MTP LEVEL 2

TEST NUMBER: 3.8	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3, 8
STD: Fig. 8
}

TITLE: Transmission failure

{
SUB TITLE: Link in processor outage (Corrupt FIBs — Basic)
}

{
PURPOSE:
To check the response to a link failure after corruption of two FIBs — detected by reception control — while in ‘‘Processor outage’’
}

{
PRE-TEST CONDITIONS: Link in service
}

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
				: | et LPO
		<----------	1 — 0	SIPO
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
1 — 0	FISU corrupt FIB (FIB+FSN=7F)	---------->		
		<----------	1 — 0	SIOS

TEST DESCRIPTION

1. Check that receipt of two FISUs at A with corrupt FIBs on processor outage state causes the link to be taken out of service. }	{

Tableau [T51.781], p.

H.T. [T52.781]
MTP LEVEL 2

TEST NUMBER: 4.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 8
STD: Fig. 10
}	

{
TITLE: Processor outage control
}	

{
SUB TITLE: Set and clear LPO while link
in service
}	

{
PURPOSE:
To check the ability to perform correctly when LPO
is set and recovered
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
				: | et LPO
		<----------	1 — 0	SIPO
				: | lear LPO
		<----------	1 — 0	FISU
		<----------	1 — 0	MSU (FIB+FSN=80)

TEST DESCRIPTION	
1. Set LPO at A while link in service. }	{
2.	Check message is discarded.
3.	Clear LPO at A.
4.	Check MSU is sent correctly.

H.T. [T53.781]
MTP LEVEL 2

TEST NUMBER: 4.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 8
STD: Fig. 10
}	

{
TITLE: Processor outage control
}	

SUB TITLE: RPO during LPO	

{
PURPOSE: To test the response to RPO is set and cleared
when ‘‘LPO’’
}	

{
PRE-TEST CONDITIONS: Link in service. PO set at B
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link	SP B		Link	SP A
				: | et LPO
		<----------	1 — 0	SIPO
1 — 0	SIPO	---------->		
		<----------	1 — 0	SIPO
	: | lear LPO			
1 — 0	FISU	---------->		
		<----------	1 — 0	SIPO

TEST DESCRIPTION	
1.	Set LPO at A.
2.	Clear LPO at B.
3.	Check is SIPO sent from A.

H.T. [T54.781]
MTP LEVEL 2

TEST NUMBER: 4.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 8
STD: Fig. 10
}	

{
TITLE: Processor outage control
}	

{
SUB TITLE: Clear LPO when ‘‘Both processor outage’’
}	

{
PURPOSE: To test the response to LPO, RPO recovered when
‘‘Both processor outage’’
}	

{
PRE-TEST CONDITIONS: PO set at A and B
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	SIPO
1 — 0	SIPO	---------->		
				: | lear LPO
		<----------	1 — 0	FISU
	: | lear LPO			
1 — 0	FISU	---------->		
		<----------	1 — 0	FISU

TEST DESCRIPTION	
1.	Clear LPO at A.
2.	Clear LPO at B.
3.	Check is FISU sent from A.

Tableau [T54.781], p.

H.T. [T55.781]
MTP LEVEL 2

TEST NUMBER: 5.1				PAGE: 1 OF 1
{ REFERENCE: Q.703 § 4.1 STD: Fig. 11 }				
{ TITLE: SU delimitation, alignment, error detection and correction }				
{ SUB TITLE: More than seven ’1’s between MSU opening and closing flags }				
{ PURPOSE: To test the signal unit delimitation, alignment, and error detection action on receipt of an MSU containing seven or more consecutive ’1’s }				
{ PRE-TEST CONDITIONS: Link in service }				
CONFIGURATION: 1				TYPE OF TEST: VAT
{ EXPECTED SIGNAL UNIT SEQUENCE: }				
	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
1 — 0 corrupt MSU (FIB+FSN=80) (containing seven consecutive ’1’s) }	{			
	---------->			
		<----------	1 — 0	FISU (BSN unchanged)
1 — 0	FISU	---------->		
TEST DESCRIPTION				
1. Send a corrupt MSU at B containing seven consecutive ’1’s. }	{			
2. Check that A discards the signal unit, and goes into octet counting mode. }	{			
3. On reception of a correct FISU, check that A leaves the octet counting mode and remains in the ‘‘in service’’ state. }	{			

H.T. [T56.781]
MTP LEVEL 2

TEST NUMBER: 5.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 4.1
STD: Fig. 11
}	

{
TITLE: SU delimitation, alignment, error detection and correction
}	

{
SUB TITLE: Greater than maximum signal unit length
}	

{
PURPOSE:
To test the signal unit delimitation, alignment, error detection action on receipt of signal unit greater than the maximum length
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
1 — 0 corrupt MSU (FIB+FSN=80) (signal unit length > max. allowed) }	{ ---------->			
		<----------	1 — 0	FISU (BSN unchanged)
1 — 0	FISU	---------->		
TEST DESCRIPTION				
1. Send corrupt MSU at B with maximum length plus extra bits and good sumcheck. }	{ 			
2. Check A discards the signal unit, and goes into octet counting mode. }	{ 			
3. On reception of a correct FISU, check that A leaves the octet counting mode and remains in the ‘‘in service’’ state. }	{ 			

Tableau [T56.781], p.

H.T. [T57.781]
MTP LEVEL 2

TEST NUMBER: 5.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 4.1
STD: Fig. 11
}	

{
TITLE: SU delimitation, alignment, error detection and correction
}	

{
SUB TITLE: Below minimum signal unit length
}	

{
PURPOSE:
To test the signal unit delimitation, alignment and error detection action on receipt of signal unit less than the minimum length
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (BIB+BSN=FF)
1 — 0	FISU	---------->		
1 — 0 corrupt MSU (FIB+FSN=80) (signal unit less than 6 octets) }	{ ---------->			
		<----------	1 — 0	FISU (BSN unchanged)
1 — 0	FISU	---------->		
TEST DESCRIPTION				
1. Generate a corrupt MSU at B of less than 6 octets (i.e. less than 5 octets between flags). }	{ 			
2. Check A discards the signal unit, and goes into octet counting mode. }	{ 			
3. On reception of a correct FISU, check that A leaves the octet counting mode and remains in the ‘‘in service’’ state. }	{ 			

H.T. [T58.781]
MTP LEVEL 2

TEST NUMBER: 5.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 2
STD: Fig. 11
}	

{
TITLE: SU delimitation, alignment, error detection and correction
}	

{
SUB TITLE: Reception of single and multiple flags between FISUs
}	

{
PURPOSE: To check that single and multiple flags between FISUs can be received
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link 1 — 0 F: Flag n=number of flags } 1 — 0	FISU case 1 case 2 FISU	----------> FISU F FISU FISU F F FISU n(≥"2) ---------->	Link	{
TEST DESCRIPTION				
1. Check that single and n flags, case 1 and case 2 respectively, can be received. }	{			

H.T. [T59.781]
MTP LEVEL 2

TEST NUMBER: 5.5	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 2
STD: Fig. 11
}	

{
TITLE: SU delimitation, alignment, error detection and correction
}	

{
SUB TITLE: Reception of single and multiple flags between MSUs
}	

{
PURPOSE: To check that single and multiple flags between MSUs can be received
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link 1 — 0 F: Flag n=number of flags }	FISU case 1 case 2	----------> MSU F MSU MSU F F MSU n(≥"2)	Link	{
1 — 0	FISU	---------->		

TEST DESCRIPTION	
1. Check that single and n flags, case 1 and case 2 respectively, can be received. }	{

Tableau [T59.781], p.

H.T. [T60.781]
MTP LEVEL 2

TEST NUMBER: 6.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.2
STD: Fig. 11, Fig. 18, Fig. 8
}	

TITLE: SUERM check	

{
SUB TITLE: Error rate of 1 in 256 — Link remains in service
}	

{
PURPOSE: To check the SUERM at a link error rate of 1 in 256 units
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link 1 — 0 Ct | | corrupt 1 | | fB: in 256 }	SP B FISU | { |	<---------- ---------->	Link 1 — 0	SP A FISU
TEST DESCRIPTION				
1. Check that ‘‘In service’’ state is maintained. The test should run for several minutes. } 2.	{ Ct = the count of corrupted FISUs.			

Note — 1) The number *(x)* of corrupt signal units before an SIOS returned is calculated according to the following formula (a = number of correct signal units):

x = [Unable to Convert Formula] $\left(\$\$1o\ 256\ x\ \ 64\ \$\$\ 2u \frac{56}{+\ a} —\ 1\ \$\$\ 2e \right)$ for $a < 256$

2) In this case as $a = 255$, so x = infinity.

H.T. [T61.781]
MTP LEVEL 2

TEST NUMBER: 6.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.2
STD: Fig. 11, Fig. 18, Fig. 8
}	

TITLE: SUERM check	

{
SUB TITLE: Error rate of 1 in 254 — Link out of service
}	

{
PURPOSE: To check the SUERM at a link error rate of 1 in 254 units
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link 1 — 0 | | corrupt 1 | | fB: in 254 } Ct	SP B FISU | { |	<---------- ----------> <----------	Link 1 — 0 1 — 0	SP A FISU SIOS
TEST DESCRIPTION				
1. SIOS should be returned after approx. 8192 corrupt FISUs (eg. CRC error). } 2. Ct = the count of corrupted FISUs. }	{ {			

Tableau [T61.781], p.

H.T. [T62.781]
MTP LEVEL 2

TEST NUMBER: 6.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.2
STD: Fig. 11, Fig. 18, Fig. 8
}	

TITLE: SUERM check	

{
SUB TITLE: Consecutive corrupted SUs
}	

{
PURPOSE: To test the SUERM on consecutive corrupted signal units
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link 1 — 0 | | | | corrupt 1 | | fB: in 1 } Ct	SP B FISU { |	<---------- ----------> <----------	Link 1 — 0 1 — 0	SP A FISU SIOS
TEST DESCRIPTION				
1. SIOS should be returned after approx. 64 corrupt FISUs (eg. CRC error). } 2. Ct = the count of corrupted FISUs. }	{ {			

Tableau [T62.781], p.

H.T. [T63.781]
MTP LEVEL 2

TEST NUMBER: 6.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.2
STD: Fig. 11, Fig. 18
}	

TITLE: SUERM check	

{
SUB TITLE: Time controlled break of the link
}	

{
PURPOSE: To check response to a range of time controlled breaks of Tx or Rx
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link 1 — 0	SP B FISU : break Tx : restore Tx FISU	<---------- ----------> ----------> <----------	Link 1 — 0 1 — 0	SP A FISU FISU
TEST DESCRIPTION				
1. Break the transmission link, and restore before level 2 goes out of service. (Break time is less than approx. 128ms for 64 kbit/s). }	{			
2. Check that A enters and leaves the octet counting mode on reception of an FISU. }	{			

H.T. [T64.781]
MTP LEVEL 2

TEST NUMBER: 7.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.3
STD: Fig. 9, Fig. 11, Fig. 17
}	

TITLE: AERM check	

{
SUB TITLE: Error rate below the normal threshold
}	

{
PURPOSE: To test the AERM on error rates below the normal threshold
}	

{
PRE-TEST CONDITIONS: Link out of service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link
 	
1 — 0
 	
{
.
1 — 0
1 — 0
1 — 0
1 — 0
}
.
SIO
SIN
corrupt LSSUs
SIN
}
<----------
---------->
<----------
---------->
---------->
---------->
<----------
}
SIO
SIN
|
| T4
|
|
FISU
}
	SP B
	
	SIOS
	
	{
	
	{
	
	1 — 0 1 — 0 1 — 0
		<----------
		---------->
		
		{
			Link
			1 — 0
				SP A
				
				SIOS
				
				: start

TEST DESCRIPTION				
1. 2. Generate x number of corrupt LSSUs (e.g. CRC error) at B.(x < Tin). } 3. Check that the proving period continues and the link aligns successfully. }	Start link at A. { {			

Tableau [T64.781], p.

H.T. [T65.781]
MTP LEVEL 2

TEST NUMBER: 7.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.3
STD: Fig. 9, Fig. 11, Fig. 17
}	

TITLE: AERM check	

{
SUB TITLE: Error rate at the normal threshold
}	

{
PURPOSE: To test the AERM at an error rate equal to the normal threshold
}	

{
PRE-TEST CONDITIONS: Link out of service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	SIOS
1 — 0	SIOS	---------->		
				: start
		<----------	1 — 0	SIO
1 — 0	SIO	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
	SIN	{		
---------->				
<----------				
}	. 1 — 0	| | T4 | FISU		
TEST DESCRIPTION				
1. 2. Generate x number of corrupt LSSUs (e.g. CRC error) at B.(x ≥" Tin). } 3. Check that the proving period is aborted, then restarted and link aligns successfully. }	Start link at A. { {			

Tableau [T65.781], p.

H.T. [T66.781]
MTP LEVEL 2

TEST NUMBER: 7.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.3
STD: Fig. 9, Fig. 11, Fig. 17
}	

TITLE: AERM check	

{
SUB TITLE: Error rate above the normal threshold
}	

{
PURPOSE:
To test the AERM at an error rate above the
threshold over five proving periods
}	

{
PRE-TEST CONDITIONS: Link out of service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
1 — 0	SIOS	<---------- ---------->	1 — 0	SIOS
				: start
		<----------	1 — 0	SIO
1 — 0	SIO	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
		<----------	1 — 0	SIN
1 — 0	SIN	---------->		
1 — 0	corrupt LSSUs	---------->		
		<----------	1 — 0	SIOS

TEST DESCRIPTION	
1.	Start link at A.
2. Generate x number of corrupt LSSUs (e.g. CRC error) at B.(x ≥" Tin). }	{
3. Observe that 5 proving period attempts are made before link out of service state. }	{

Tableau [T66.781], p.

H.T. [T67.781]
MTP LEVEL 2

TEST NUMBER: 7.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 10.3
STD: Fig. 9, Fig. 11, Fig. 17
}	

TITLE: AERM check	

{
SUB TITLE: Error rate at the emergency threshold
}	

{
PURPOSE: To test the AERM at the emergency
threshold
}	

{
PRE-TEST CONDITIONS: Link out of service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	SIOS
1 — 0	SIOS	---------->		
				: start
		<----------	1 — 0	SIO
1 — 0	SIO	---------->		
		<----------	1 — 0	SIN
1 — 0	SIE	---------->		
1 — 0 1 — 0 T4 (Pe) | corrupt LSSU | | SIE | | |	{			
}	{			
---------->				
---------->				
<----------				
<----------				
}	. 1 — 0 1 — 0	. SIN FISU		

TEST DESCRIPTION	
1. Start link at A, check emergency proving started from B.	{ }
2. Generate x number of corrupt LSSUs (e.g. CRC error) at B. (5 > x ≥" Tie).	{ }
3. Check that link aligns successfully.	{ }

Tableau [T67.781], p.

H.T. [T68.781]
MTP LEVEL 2

TEST NUMBER: 8.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.2
STD: Fig. 13, Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: MSU transmission and reception
}	

{
PURPOSE: To check basic MSU transmission and
reception
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT, CPT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
1 — 0	MSU (FIB+FSN=80) (BIB+BSN=FF)	---------->		
		<----------	1 — 0	{
FISU (FIB+FSN=FF) (BIB+BSN=80) }				
1 — 0 FISU (FIB+FSN=80) (BIB+BSN=FF) }	{			
	---------->			
		<----------	1 — 0	MSU (FIB+FSN=80) (BIB+BSN=80)
1 — 0 FISU (FIB+FSN=80) (BIB+BSN=80) }	{			
	---------->			
		<----------	1 — 0	{
FISU (FIB+FSN=80) (BIB+BSN=80) }				

TEST DESCRIPTION	
1.	Generate an MSU at B.
2. Check that A receives the MSU correctly, and returns a positive acknowledgement. }	{
3.	Generate an MSU at A.
4. Check that B receives the MSU correctly, and returns a positive acknowledgement. }	{

Tableau [T68.781], p.

H.T. [T69.781]
MTP LEVEL 2

TEST NUMBER: 8.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 13
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Negative acknowledgement of an MSU
}	

{
PURPOSE: To test the response to a negatively acknowledged MSU
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
		<----------	1 — 0	MSU (FIB+FSN=80)
		<----------	1 — 0	MSU (FIB+FSN=81)
1 — 0	FISU (BIB+BSN=7F)	---------->		
		<----------	1 — 0	MSU (FIB+FSN=00)
		<----------	1 — 0	MSU (FIB+FSN=01)

TEST DESCRIPTION	
1.	Send MSU from A.
2. Reply with negative acknowledgement from B.	{ }
3. Check that A retransmits the MSU.	{ }

H.T. [T70.781]
MTP LEVEL 2

TEST NUMBER: 8.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 13
}	

{
TITLE: Transmission and reception control (Basic)
}	

SUB TITLE: Check RTB full	

{
PURPOSE: To check that MSUs are buffered when no acknowledgements
are received
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
1 — 0	FISU (BIB+BSN=FF)	<----------	1 — 0	FISU
		---------->		
		<----------	1 — 0	{
MSU (FIB+FSN=80) • • }				
		<----------	1 — 0	MSU (FIB+FSN=FE)
		<----------	1 — 0	FISU (FIB+FSN=FE)
1 — 0	FISU (BIB+BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FIB+FSN=00) • • }				
		<----------	1 — 0	MSU (FIB+FSN=7E)
TEST DESCRIPTION				
1. Generate MSUs at A, at a rate of 100 per second, in order to fill the RTB before the EDA timer T7 expires. }	{			
2. No acknowledgements are sent from B until the last message is received, then send negative acknowledgement to the first message received. }	{			
3. Check that the complete contents of the RTB are retransmitted. }	{			

Tableau [T70.781], p.

H.T. [T71.781]
MTP LEVEL 2

TEST NUMBER: 8.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.2
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Single MSU with erroneous FIB
}	

{
PURPOSE: To ensure correct performance when an MSU with erroneous FIB is received
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (BIB+BSN=7F)
1 — 0	FISU (FIB+FSN=7F)	---------->		
1 — 0	MSU (FIB+FSN=80)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=7F)
1 — 0	FISU (FIB+FSN=00)	---------->		
1 — 0	FISU (FIB+FSN=00)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=FF)
1 — 0	MSU (FIB+FSN=80)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=80)

TEST DESCRIPTION	
1. Generate an MSU at B with FIB inverted.	{ }
2.	Check A discards the MSU.
3. Generate 2 FISUs at B with correct FIB.	{ }
4. Check A discards the FISU and negative acknowledgement returned.	{ }
5. Check that B retransmits the MSU correctly, and positive acknowledgement returned.	{ }

H.T. [T72.781]
MTP LEVEL 2

TEST NUMBER: 8.5	PAGE: 1 OF 1
{ REFERENCE: Q.703 § 5.2 STD: Fig. 14 }	
{ TITLE: Transmission and reception control (Basic) }	
SUB TITLE: Duplicated FSN	
{ PURPOSE: To test the reception control response to duplicated FSNs }	
{ PRE-TEST CONDITIONS: Link in service }	
CONFIGURATION: 1	TYPE OF TEST: VAT
{ EXPECTED SIGNAL UNIT SEQUENCE: }	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
1 — 0	MSU (FIB+FSN=80)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=80)
1 — 0	MSU (FIB+FSN=80)	---------->		
1 — 0	FISU (FIB+FSN=81)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=00)
1 — 0	MSU (FIB+FSN=01)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=01)
TEST DESCRIPTION				
1. Generate an MSU at B, check A receives the MSU correctly and returns a positive acknowledgement. }	{			
2. Duplicate the FSN at B, check that A responds with a negative acknowledgement. }	{			
3. Retransmit the MSU with correct FSN, check that A replies with a positive acknowledgement. }	{			

H.T. [T73.781]
MTP LEVEL 2

TEST NUMBER: 8.6	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.2
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Erroneous retransmission — Single MSU
}	

{
PURPOSE: To test the reception control response to retransmission
of a single MSU
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (BIB+BSN=FF)
1 — 0	FISU (FIB+FSN=FF)	---------->		
1 — 0	MSU (FIB+FSN=00)	---------->		
1 — 0	FISU (FIB+FSN=80)	---------->		
1 — 0	FISU (FIB+FSN=80)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=7F)
1 — 0	MSU (FIB+FSN=00)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=00)

TEST DESCRIPTION	
1. A single MSU with FIB inverted in error is sent to A, followed by FISUs with correct FIBs. }	{
2. Check that A returns a negative acknowledgement for the MSU. }	{
3.	Retransmit the MSU correctly.
4. Check that A receives the MSU correctly and returns a positive acknowledgement. }	{

H.T. [T74.781]
MTP LEVEL 2

TEST NUMBER: 8.7	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Erroneous retransmission — Multiple FISUs
}	

{
PURPOSE: To test reception control response to retransmissions
of multiple FISUs
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU (FIB+FSN=FF)	---------->		
1 — 0	FISU (FIB+FSN=7F)	---------->		
1 — 0	FISU (FIB+FSN=FF)	---------->		
1 — 0	FISU (FIB+FSN=7F)	---------->		
		<----------	1 — 0	SIOS
TEST DESCRIPTION				
1. Generate FISUs with the FIB inverted at B. }	{			
2. Check that A responds with link out of service. }	{			

H.T. [T75.781]
MTP LEVEL 2

TEST NUMBER: 8.8	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Single FISU with corrupt FIB
}	

{
PURPOSE: To test the response to receive an FISU with a corrupt FIB
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU (FIB+FSN=FF)	---------->		
1 — 0	FISU (FIB+FSN=7F)	---------->		
		<----------	1 — 0	FISU
1 — 0	FISU (FIB+FSN=FF)	---------->		
		<----------	1 — 0	FISU

TEST DESCRIPTION	
1. Generate one FISU with a corrupt FIB at B, and check that the link status remains in service. }	{

Tableau [T75.781], p.

H.T. [T76.781]
MTP LEVEL 2

TEST NUMBER: 8.9	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.2
STD: Fig. 10, Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Single FISU prior to RPO being set
}	

{
PURPOSE: To test the response to RPO while in the abnormal
FIB state
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
1 — 0	FISU (one only) (FIB+FSN=7F)	---------->		
1 — 0	SIPO	---------->		
1 — 0	MSU (FIB+FSN=80)	---------->		
1 — 0	FISU (FIB+FSN=80)	{		
----------> | ua)				
}				
1 — 0	FISU (FIB+FSN=80)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=7F)
1 — 0	MSU (FIB+FSN=00)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=00)

TEST DESCRIPTION

1. Generate one FISU at B with abnormal FIB. }	{
2. Send SIPO from B, followed by an MSU. }	{
3. Check A responds correctly with negative acknowledgement and a retransmission is received corrrectly. }	{

H.T. [T77.781]
MTP LEVEL 2

TEST NUMBER: 8.10	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Abnormal BSN — single MSU
}	

{
PURPOSE: To test the response to an abnormal
BSN
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0 FISU (FIB+FSN=FF) (BIB+BSN=FF) }	{			
	---------->			
1 — 0	MSU (FIB+FSN=80) (BIB+BSN=BF)	——----------		
1 — 0 FISU (FIB+FSN=80) (BIB+BSN=FF) }	{			
----------> | ua) }	{			
1 — 0 FISU (FIB+FSN=80) (BIB+BSN=FF) }	{			
	---------->			
		<----------	1 — 0	FISU (BIB+BSN=7F)
1 — 0	MSU (FIB+FSN=00) (BIB+BSN=FF)	---------->		
		<----------	1 — 0	FISU (BIB+BSN=00)

TEST DESCRIPTION	
1. Generate a single MSU with abnormal BSN at B, followed by FISUs with correct BSN. }	{
2. Check that A responds with a negative acknowledgement. }	{
3. Retransmit the MSU correctly at B. }	{
4. Check that the MSU is received correctly and positive acknowledgement is given. }	{

Tableau [T77.781], p.

H.T. [T78.781]
MTP LEVEL 2

TEST NUMBER: 8.11	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Abnormal BSN — two consecutive FISUs
}	

{
PURPOSE: To test the response to abnormal BSNs in two consecutive FISUs
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU (BIB+BSN=FF)	---------->		
1 — 0	FISU (BIB+BSN=BF)	---------->		
1 — 0	FISU (BIB+BSN=BF)	---------->		
1 — 0	FISU (BIB+BSN=FF)	---------->		
		<----------	1 — 0	SIOS
TEST DESCRIPTION				
1. Generate two consecutive FISUs at B with abnormal BSNs.	{			
}				
2. Check that A responds by taking the link out of service.	{			
}				

H.T. [T79.781]
MTP LEVEL 2

TEST NUMBER: 8.12	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 5.3
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Excesssive delay of acknowledgement
}	

{
PURPOSE: To test the transmission control response to the expiration
of EDA timer T7
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	**T7 |** FISU
1 — 0	FISU (BIB+BSN=FF)	---------->		
		<----------	1 — 0	{
T7 | MSU **T7** | (FIB+FSN=80) T7 | **T7** | }				
		<----------	1 — 0	**T7 |** SIOS

TEST DESCRIPTION	
1. 2. Discard the received MSU at B and send no acknowledgement to A for more than T7 period. } 3. Check that the link is taken out of service by SIOS generated at A after T7 has expired. } 4. Timer T7 shall be in the range 0.5 secs to 2.0 secs. }	Generate an MSU at A. { { {

H.T. [T80.781]
MTP LEVEL 2

TEST NUMBER: 8.13	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 7
STD: Fig. 14
}	

{
TITLE: Transmission and reception control (Basic)
}	

{
SUB TITLE: Level 3 Stop command
}	

{
PURPOSE: To test the response to a Stop
command
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
				: stop
		<----------	1 — 0	SIOS

TEST DESCRIPTION	
1. 2. Check that A responds with link out of service. }	Give Stop command at A. {

H.T. [T81.781]
MTP LEVEL 2

TEST NUMBER: 9.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.2
STD: Fig. 15, Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: MSU transmission and reception
}	

{
PURPOSE: To check basic MSU transmission and reception
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT, CPT

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	MSU (FSN=0, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
1 — 0	FISU (FSN=7F, BSN=0)	---------->		
		<----------	1 — 0	FISU (FSN=0, BSN=7F)
1 — 0	MSU (FSN=0, BSN=0)	---------->		
		<----------	1 — 0	FISU (FSN=0, BSN=0)

TEST DESCRIPTION	
1. 2. Check that B receives the MSU correctly. } 3. Check that A sends FISUs after receiving an FISU with a positive acknowledgement. } 4. 5. Check that A receives the MSU correctly and returns a positive acknowledgement. }	Generate an MSU at A. { { Generate an MSU at B. {

H.T. [T82.781]
MTP LEVEL 2

TEST NUMBER: 9.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.3
STD: Fig. 15, Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

SUB TITLE: Priority control	

{
PURPOSE: To check the preventive retransmission procedure
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	MSU (FSN=0, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=1, BSN=7F) • • }				
		<----------	1 — 0	{
MSU (FSN=2, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=0, BSN=7F)
		<----------	1 — 0	MSU (FSN=1, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=2, BSN=7F) • • }				
1 — 0	FISU (FSN=7F, BSN=0)	---------->		
1 — 0	FISU (FSN=7F, BSN=1)	---------->		
1 — 0	FISU (FSN=7F, BSN=2)	---------->		
		<----------	1 — 0	FISU (FSN=2, BSN=7F)

TEST DESCRIPTION	
1.	Generate two MSUs at A.
2.	{
No positive acknowledgement is sent from B.	
}	
3.	{
Check that MSUs are retransmitted at A.	
}	
4.	Generate another MSU at A.
5.	{
Check that B receives MSUs correctly.	
}	
6.	{
Reply with positive acknowledgements at B.	
}	
7.	{
Check that A stops retransmission after receiving the positive acknowledgement for the last MSU in RTB and sends FISU.	
}	

H.T. [T83.781]
MTP LEVEL 2

TEST NUMBER: 9.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.4
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Forced retransmission with the value N
1
}	

{
PURPOSE: To check that ‘‘RTB full’’ is detected by N
1 and forced
retransmission occurs
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=7E, BSN=7
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=X, BSN=7F
1 — 0	FISU (FSN=7F, BSN=0)	---------->		
		<----------	1 — 0	{
MSU (FSN=X+1, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=7F, BSN=7

TEST DESCRIPTION	
1. Generate 128 MSUs at A, at a rate of 100 per second, in order to fill the RTB before the EDA timer T7 expires. }	{
2. No positive acknowledgement is sent from B until a forced retransmission starts at A. }	{
3. Reply with a positive acknowledgement with BSN=0 before T7 expires at A. }	{
4. Check that the forced retransmission is canceled after the transmission of the last MSU in RTB. }	{
Note — N 1 is the maximum number of MSUs which are available for retransmission. (The value of N 1 is normally 127). }	

Tableau [T83.781], p.

H.T. [T84.781]
MTP LEVEL 2

TEST NUMBER: 9.4	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.4
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Forced retransmission with the value N
2
}	

{
PURPOSE: To check that ‘‘RTB full’’ is detected by N
2 and forced
retransmission starts
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=N—1, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=X, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=a—1)	---------->		
		<----------	1 — 0	MSU (FSN=a, BSN=7F)
		<----------	1 — 0	MSU (FSN=N, BSN=7F) (a > X)

TEST DESCRIPTION	
1. Generate N+1 MSUs at A, (the octet count of N MSUs is larger than N 2). }	{
2. Send no positive acknowledgement at B until a forced retransmission starts at A. }	{
3. Check that B receives the MSUs with FSN=0 up to FSN=N—1 but does not receive the MSU with FSN=N. }	{
4. Reply with a positive acknowledgement with BSN=a—1 at B. }	{
5. Check that the retransmission restarts from the next value of FSN which is acknowledged by B when the retransmission is interrupted. }	{
6. Check that B receives the MSU with FSN=N. }	{
Note — N 2 is the maximum number of octets which are available for retransmission. }	{

H.T. [T85.781]
MTP LEVEL 2

TEST NUMBER: 9.5	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.4
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Forced retransmission cancel
}	

{
PURPOSE:
To check that the forced retransmission is canceled when BSN equal to FSNL is received
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=7E, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=X, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7E)	---------->		
		<----------	1 — 0	MSU (FSN=7F, BSN=7F)

TEST DESCRIPTION	
1. Generate N 1+1 MSUs at A, (e.g. 128). }	{
2. Send no positive acknowledgement at B until a retransmission occurs at A. }	{
3. Reply with a positive acknowledgement with BSN=7E at B. }	{
4. Check that a forced retransmission is canceled and the MSU with FSN=7F is sent at A. }	{
Note 1 — FSNL is the FSN of the last MSU in RTB. }	{
Note 2 — Alternatively, the number of octets threshold (N 2), instead of the number of MSUs threshold (N 1), could be used to start forced retransmission. }	

H.T. [T86.781]
MTP LEVEL 2

TEST NUMBER: 9.6	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.4
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Repetition of forced retransmission
}	

{
PURPOSE:
To check that the forced retransmission repeats when
‘‘RTB full’’ is still detected after finishing a forced
retransmission
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=7E, BSN=7F)
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
		<----------	1 — 0	MSU (FSN=7E, BSN=7F)
		<----------	1 — 0	MSU (FSN=0, BSN=7F) •

TEST DESCRIPTION	
1. Generate MSUs at A at a rate of N per second, in order to make A repeat a forced retransmission. (N ≥" 127 ÷ T, where T = lower limit of T7) }	{
2. No acknowledgement is sent from B. }	{
3. Check that A repeats a forced retransmission. }	{

H.T. [T87.781]
MTP LEVEL 2

TEST NUMBER: 9.7	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.2
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: MSU transmission while RPO set
}	

{
PURPOSE: To ensure correct performance while RPO
is set
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
MSU (FSN=0, BSN=7F) • • }				
	: set LPO			
1 — 0	SIPO (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
FISU (FSN=0, BSN=7F) • • }				
	: clear LPO			
1 — 0	MSU (FSN=0, BSN=7F)	---------->		
		<----------	1 — 0	MSU (FSN=0, BSN=7F)
1 — 0	MSU (FSN=0, BSN=0)	---------->		
		<----------	1 — 0	FISU (FSN=0, BSN=0)

TEST DESCRIPTION	
1.	Generate an MSU at A.
2. Instead of sending positive acknowledgement, set and keep PO at B. }	{
3. Check A stops a retransmission of the MSU and sends FISUs, and not detect link failure by the expiration of T7. }	{
4. Cease PO and send an MSU with no positive acknowledgement at B. }	{
5. Check A starts a retransmission of the MSU. }	{
6. Generate an MSU with a positive acknowledgement at B. }	{
7. Check A receives the MSU and responds correctly. }	{

Tableau [T87.781], p.

H.T. [T88.781]
MTP LEVEL 2

TEST NUMBER: 9.8	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.3
STD: Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Abnormal BSN — Single MSU
}	

{
PURPOSE: To test the response to an abnormal
BSN
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
1 — 0	MSU (FSN=0, BSN=0)	---------->		
1 — 0	MSU (FSN=0, BSN=7F)	---------->		
1 — 0	MSU (FSN=0, BSN=7F)	---------->		
		<----------	1 — 0	FISU (FSN=7F, BSN=0)
TEST DESCRIPTION				
1. Generate a single MSU at B with abnormal BSN followed by retransmission of that MSU with normal BSN. }	{			
2. Check that A responds with a positive acknowledgement and not detect link failure. }	{			

H.T. [T89.781]
MTP LEVEL 2

TEST NUMBER: 9.9	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.3
STD: Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Abnormal BSN — Two MSUs
}	

{
PURPOSE:
To test the response to two consecutive MSUs with an MSU having normal BSN between them
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
1 — 0	MSU (FSN=0, BSN=7E)	---------->		
1 — 0	MSU (FSN=0, BSN=7F)	---------->		
1 — 0	MSU (FSN=0, BSN=7E)	---------->		
		<----------	1 — 0	SIOS (FSN=7F, BSN=7F)

TEST DESCRIPTION	
1. Generate two consecutive MSUs at B with abnormal BSN with an MSU having normal BSN between them. }	{
2. Check that all MSUs are discarded at A. }	{
3. Check that A responds by taking the link out of service. }	{

H.T. [T90.781]
MTP LEVEL 2

TEST NUMBER: 9.10	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.2
STD: Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

SUB TITLE: Unexpected FSN	

{
PURPOSE: To check the reception control response to an MSU with unexpected FSN
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
1 — 0	MSU (FSN=0, BSN=7F)	---------->		
1 — 0	MSU (FSN=2, BSN=7F)	---------->		
		<----------	1 — 0	FISU (FSN=7F, BSN=0)
TEST DESCRIPTION				
1. Generate an MSU with unexpected FSN at B. }	{			
2. Check A discards the MSU with unexpected FSN and not sends acknowledgement for that MSU. }	{			

Tableau [T90.781], p.

H.T. [T91.781]
MTP LEVEL 2

TEST NUMBER: 9.11	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.3
STD: Fig. 15
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Excessive delay of acknowledgement
}	

{
PURPOSE: To test the transmission control response to the expiration
of EDA timer T7
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=7F, BSN=7F)	---------->		
		<----------	1 — 0	{
| MSU | (FSN=0, BSN=7F) | fB T7 • | T7 • | fB T7 • }				
		<----------	1 — 0	SIOS (FSN=0, BSN=7F)

TEST DESCRIPTION	
1. 2. Suspend sending positive acknowledgement at B for more than T7 period. } 3. Check that A sends SIOSs instead of retransmission of MSU after T7 expires. } 4. Timer T7 shall be in the range 0.5 secs to 2.0 secs. }	Generate an MSU at A. { { {

H.T. [T92.781]
MTP LEVEL 2

TEST NUMBER: 9.12	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 6.2
STD: Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: FISU with FSN expected for MSU
}	

{
PURPOSE: To check that the received FISU having FSN expected for MSU
is discarded
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link 1 — 0	FISU (FSN=7F, BSN=7F)	---------->	Link	
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)
1 — 0	FISU (FSN=0, BSN=7F)	---------->		
		<----------	1 — 0	FISU (FSN=7F, BSN=7F)

TEST DESCRIPTION	
1. Generate an FISU with FSN expected for MSU at B.	{ }
2. Check that A discards the FISU and responds with an FISU with correct BSN.	{
}	

H.T. [T93.781]
MTP LEVEL 2

TEST NUMBER: 9.13	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 7
STD: Fig. 16
}	

{
TITLE: Transmission and reception control (PCR)
}	

{
SUB TITLE: Level 3 Stop command
}	

{
PURPOSE: To test the response to a Stop command
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
		<----------	1 — 0	FISU
1 — 0	FISU	---------->		
				: stop
		<----------	1 — 0	SIOS

TEST DESCRIPTION	
1. 2. Check that A responds with link out of service. }	Give Stop command at A. {

Tableau [T93.781], p.

H.T. [T94.781]
MTP LEVEL 2

TEST NUMBER: 10.1	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 9
STD: Fig. 19
}	

TITLE: Congestion Control	

{
SUB TITLE: Congestion abatement
}	

{
PURPOSE: To check the congestion abatement
procedure
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

	SP B			SP A
Link			Link	
				{
T5 | : make congestion **T5 | :** state }				
		<----------	1 — 0	{
T5 | SIB **T5** **|** T5 | **T5** **|** }				
		<----------	1 — 0	{
T5 | SIB **T5 |** • **T6 |** • }				
				{
T5 | : clear congestion **T5 | :** state }				
		<----------	1 — 0	**T5 |** FISU

TEST DESCRIPTION	
1. Make congestion state at A and check A sends SIB. (Implementation of congestion control is not specified.)	{ }
2. Check B receives SIBs at the interval of T5.	{ }
3. Clear congestion state at A and check A stops sending SIBs.	{ }
4. Timer T5 shall be in the range 80 ms to 120 ms.	{ }

H.T. [T95.781]
MTP LEVEL 2

TEST NUMBER: 10.2	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 9.2
STD: Fig. 19
}	

TITLE: Congestion Control	
SUB TITLE: Timer T7	

{
PURPOSE: To check timer T7 is restarted at the reception of SIB
(without expiring of T6)
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link
{
.
1 — 0
1 — 0
1 — 0
1 — 0
}
.
SIB
SIB
•
•
SIB
FISU
}
.
|
|
| Ct
|
|
| Bt
|
|
|
}
<----------
---------->
---------->
---------->
---------->
}
MSU
|
|
|
|
| T6
|
|
|
|
|
}
	SP B
	
	{
	
	{
	
	{
	
	1 — 0
		
		{
			
				SP A
				Link	

TEST DESCRIPTION

1.	Generate an MSU at A.

2.	{
	Generate SIBs at B with the time intervals of T5 for Ct, instead of positive acknowledgement.
	}

3.	{
	Check that link remains in service during Ct.
	}

4.	{
	Send FISU with positive acknowledgement from B after Bt expires.
	}

5.	{
	Check that link remains in service.
	}

6. Ct = more than T7 and less than T6. }	{
7.	Bt = less than T7.
8.	(Ct + Bt) is less than T6.

Tableau [T95.781], p.

H.T. [T96.781]
MTP LEVEL 2

TEST NUMBER: 10.3	PAGE: 1 OF 1

{
REFERENCE: Q.703 § 9.3
STD: Fig. 19
}	

TITLE: Congestion Control	
SUB TITLE: Timer T6	

{
PURPOSE: To check ‘‘Remote Congestion’’
Timer T6
}	

{
PRE-TEST CONDITIONS: Link in service
}	

CONFIGURATION: 1	TYPE OF TEST: VAT

{
EXPECTED SIGNAL UNIT SEQUENCE:
}	

Link
{
1 — 0
1 — 0
1 — 0
1 — 0
}
SIB
SIB
•
•
SIB
•
•
SIB
}
---------->
---------->
---------->
---------->
<----------
}
|
|
|
| T6
|
|
|
|
|
|
SIOS
}
	SP B
	
	{
	
	{
	
	. 1 — 0
		
		{
			Link	SP A

TEST DESCRIPTION				
1. Generate SIB at B until Timer T6 expires. }	{ 			
2. Check link becomes out of service. }	{ 			
3. Timer T6 shall be in the range 3 secs to 6 secs (8 to 12 secs for 4.8 kbit/s). }	{ 			

Tableau [T96.781], p.

FIGURE 1/Q.781, p.