JTC 4

INTERNATIONAL STANDARD

ISO/IEC 8882-2

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Information technology — Telecommunications and information exchange between systems — X.25 DTE conformance testing —

Part 2:
Data link layer conformance test suite

Technologies de l'information — Télécommunications et échanges d'information entre systèmes — Essais de conformité X.25-ECCD —

Partie 2: Suite d'essais de conformité pour la couche liaison de données

Reference number
ISO/IEC 8882-2:1992(E)

Contents

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 8882-2 was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology.*

Annexes A and B of this International Standard are for information only.

Introduction

This part of ISO/IEC 8882 presents the X.25-DTE Conformance Test Suite for the Data Link Layer, described in Tree and Tabular Combined Notation (TTCN).

Part 1 of ISO/IEC 8882 explains the objectives and usage of this part of ISO/IEC 8882.

Clause 1 of this part of ISO/IEC 8882 is the scope which provides an objective basis for the applicability of the tests within this part of ISO/IEC 8882. Clauses 2 and 3 give the references, definitions and abbreviations used in this part of ISO/IEC 8882. Clause 4 contains information relating to procedures performed for conformance testing. The test suite structure is defined in terms of test groups and subgroups in Table 1. This clause also gives an overview of the test suite. Clause 5 contains the abstract test suite for the X.25-DTE LAPB Data Link Layer protocol. Finally, Clause 6 provides the abstract test selection rules.

Information technology — Telecommunications and information exchange between systems — X.25 DTE conformance testing —

Part 2:
Data link layer conformance test suite

1 Scope

This part of ISO/IEC 8882 defines an abstract test suite for testing the conformance of the Data Link Layer of an IUT with respect to ISO 7776 or the CCITT Recommendation X.25 (1980, 1984).

Conformance of a Data Terminal Equipment (DTE) to the above ISO International Standard or CCITT Recommendations is tested using a dedicated circuit between the tester and the DTE. It is noted that CCITT Recommendations X.25-1980 and X.25-1984 are written from the perspective of a DCE and therefore do not always explicitly specify the DTE's operation. In such cases it is assumed that recommended operation of a DTE is included by implication because of the need to communicate with X.25 DCEs. This part of ISO/IEC 8882 excludes the testing of the LAP procedures given in the CCITT Recommendations.

Note: Test cases for extended mode operation (Modulo 128), multilink procedure and DTE-DTE operation as per ISO 7776 are for further study.

The tests in this part of ISO/IEC 8882 are designed for three possible interworking situations, shown in Figure 1. This part specifies tests for all three cases shown in Figure 1, but recognizes that not every test may apply to a particular DTE. A test selection procedure has to be performed to determine the applicability of a test to a particular DTE. Such selection will be based on the PICS and the PIXIT.

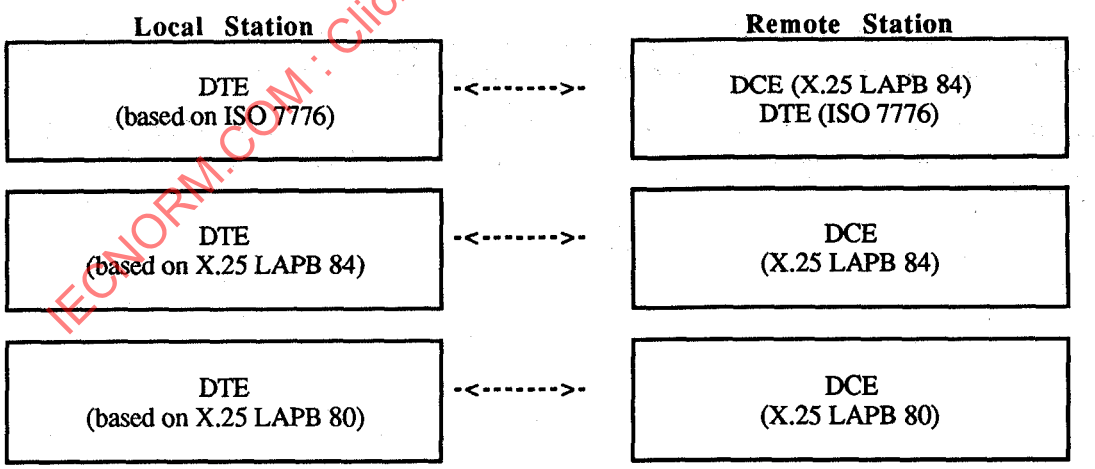

Figure 1. Testing X.25-DTE/DCE and X.25-DTE/DTE Interworking

In the rest of this part of ISO/IEC 8882, the term "X.25 standards" shall mean all three of CCITT Recommendation X.25(1980), CCITT Recommendation X.25(1984), and ISO/IEC 7776 International Standard, unless stated otherwise.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 8882. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 8882 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7498 : 1984, *Information processing systems -- Open Systems Interconnection -- Basic Reference Model* (See also CCITT Recommendation X.200).

ISO 7776 : 1986, *Information processing systems -- Data communication -- High-level data link control procedures -- Description of the X.25 LAPB-compatible DTE data link procedures.*

ISO/IEC 8882-1 : –[1)], *Information technology -- Telecommunications and information exchange between systems -- X.25-DTE conformance Testing -- Part 1, General Principles.*

ISO/IEC 9646-1 : 1991, *Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts.* (See also CCITT Recommendation X.290 (1991)).

ISO/IEC 9646-2 : 1991, *Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 2: Abstract Test Suite Specification.* (See also CCITT Recommendation X.291 (1991)).

ISO/IEC 9646-3 : –[1)], *Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 3: The tree and tabular combined notation (TTCN).*

ISO/IEC 9646-4 : 1991, *Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 4: Test realization.* (See also CCITT Recommendation X.293 (1991)).

ISO/IEC 9646-5 : 1991, *Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 5: Requirements on test laboratories and clients for the conformance assessment process.* (See also CCITT Recommendation X.294 (1991)).

CCITT Recommendation X.25 (1980), *Interface Between Data Terminating Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for Terminals Operating in the Packet Mode on the Public Data Networks.*

CCITT Recommendation X.25 (1984), *Interface Between Data Terminating Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for terminals operating in the Packet Mode on the Public Data Networks by Dedicated Circuit.*

1) To be published.

3 Definitions and abbreviations

For the purposes of this part of ISO/IEC 8882, the definitions given in 3.4 and in the following International Standards apply:

a) ISO 7498;
b) ISO/IEC 9646;
c) ISO/IEC 8882-1.

3.1 Reference model definitions

The following terms defined in ISO 7498 are used:

a) (N)-protocol data unit (N-PDU). In the context of this part of ISO/IEC 8882 (N) is layer 2 and so N-PDU is abbreviated to PDU. A PDU in the Data Link Layer is also referred to as a "frame".
b) Data Link Layer

3.2 Conformance testing terms

The following terms are used from the Conformance Testing Methodology and Framework International Standard (ISO/IEC 9646):

a) Conformance Testing
b) Conformance Test Suite
c) Implementation Under Test (IUT)
d) Protocol Implementation Conformance Statement (PICS)
e) Protocol Implementation Extra Information for Testing (PIXIT)
f) Static Conformance Requirements (SCR)
g) Behaviour Testing
h) Test Purpose
i) Tree and Tabular Combined Notation (TTCN)
j) Preamble
k) Test Body
l) Test Step
m) Test Event
n) Abstract Service Primitive (ASP)
o) Test Group
p) Abstract Test Suite (ATS)
q) Executable Test Suite (ETS)
q) Test Verdicts
r) Lower Tester
s) Upper Tester
t) Test Methods
u) Remote Single (layer) Test Method (RS method)
v) Valid Test Event
w) Invalid Test Event
x) Inopportune Test Event
y) Point of Control and Observation (PCO)

3.3 X.25-DTE conformance testing terms

This part of ISO/IEC 8882 makes use of the following terms defined in ISO/IEC 8882-1:

a) Improper PDU
b) Proper PDU
c) Test Case
d) Test Subgroup
e) Tester

3.4 Additional definitions

This test suite uses test subgroups for proper, improper and inopportune frames to test the IUT behaviour. These terms are defined below.

3.4.1 improper frame: A frame that satisfies one or more of the following conditions:

a) it is not properly bounded by two flags;
b) it contains fewer than 32 bits between flags;
c) it contains a Frame Check Sequence (FCS) error;
d) it contains an invalid address field encoding;
e) it contains a command or response control field encoding that is undefined or not implemented in X.25-DTE LAPB Data Link Layer protocol as specified in ISO 7776;
f) it is an I frame exceeding the maximum established frame length;
g) it is an unnumbered or supervisory frame with an information field which is not permitted;
h) it is a frame with an invalid N(R).

3.4.2 inopportune frame: A syntactically valid frame arriving at a time (DTE's state) when it should be considered irrelevant by the DTE. Syntactically valid frames are those that are allowed by the X.25 standards for a DTE using the LAPB procedure and are not covered by 3.4.1.

3.4.3 proper frame: A valid frame arriving at the correct DTE's state or phase and not covered by 3.4.1 or 3.4.2.

3.5 Abbreviations

The abbreviation IUT is used in this part of ISO/IEC 8882 to refer to an X.25-DTE under test.

4 Conformance test suite - Data link layer

The X.25-DTE Data Link Layer Conformance Test Suite structure is outlined in table 1.

Table 1 - Data link layer test suite structure

Data Link Layer Test Groups	Test State Abbreviation	Test Group Name	Current State of IUT
DL1	DP	Disconnected Phase.	DISC received and UA or DM transmitted (see clause 4.10).
DL2	LD	Link Disconnection phase.	DISC transmitted from any phase (see clause 4.11)
DL3	LS	Link Set-up phase.	SABM transmitted from DP (see clause 4.11)
DL4	IT	Information Transfer phase.	SABM received and UA transmitted, or SABM transmitted and UA received, while in DP or IT phase.
DL5	FR	Frame Reject condition	FRMR transmitted from IT phase (see clause 4.10).
DL6	BY	IUT Busy condition	RNR transmitted from IT phase (see clauses 4.10 and 4.11).
DL7	SR	Sent Reject condition.	REJ transmitted from IT phase.
DL8	SP	System Parameters and error recovery.	See note below.

Note: Test Group DL8 tests the setting of the system parameters:
T1 - Retransmission timer;
N2 - Maximum number of attempts by IUT to complete a transmission.
The setting of maximum established length and k (window size) are tested under test group DL4.

4.1 Data link layer test groups and subgroups

The first seven test groups shown in table 1, called Data Link Layer Test Groups DL1 to DL7, are provided to test the interactive capability of the IUT in every phase. The test groups are further divided into three subgroups according to the definitions in clause 3.4, above. These are as follows:

- Subgroup 1 involves those test cases where the tester transmits a proper frame.
- Subgroup 2 involves those test cases where the tester transmits an improper frame.
- Subgroup 3 involves those test cases where the tester transmits an inopportune frame.

The eighth test group (DL8) is designed to test the operational correctness of the IUT system parameters listed in table 1.

4.2 Test suite overview

An overview of the test suite is outlined in table 2. The description column contains the stimulus sent by tester.

Table 2 - Data link layer test suite overview

Test Suite Overview			
Suite Name:	LAPB		
Standards ref:	ISO 7776, CCITT X.25-1984, CCITT X.25-1980		
PICS proforma ref:	ISO 7776 (DAM 1)		
PIXIT proforma ref:	ISO/IEC 8882-2 PIXIT Proforma		
PICS/PIXIT use:	ISO/IEC 8882-2 clause PICS and PIXIT abstract test selection rules		
Test Method(s):	Remote Single Layer		
Comments:			
Test Case Identifier	**Test Case Reference**	**Page**	**Description**
DL1_101	LAPB/DL1/DL1_101	60	DISC/P=1
DL1_102	LAPB/DL1/DL1_102	60	DISC/P=0
DL1_103	LAPB/DL1/DL1_103	61	SABM/P=1
DL1_104	LAPB/DL1/DL1_104	61	SABM/P=0
DL1_105	LAPB/DL1/DL1_105	62	DM/F=0
DL1_201	LAPB/DL1/DL1_201	63	Undefined command
DL1_202	LAPB/DL1/DL1_202	63	Undefined response
DL1_203	LAPB/DL1/DL1_203	64	Invalid address
DL1_204	LAPB/DL1/DL1_204	64	Tester sends FCS error
DL1_205	LAPB/DL1/DL1_205	65	DM/F=1
DL1_206	LAPB/DL1/DL1_206	65	DM/F=0 with info. field
DL1_207	LAPB/DL1/DL1_207	66	SABM/P=1 with info. field
DL1_208	LAPB/DL1/DL1_208	66	UA/F=0 with info. field
DL1_209	LAPB/DL1/DL1_209	67	RR/P=1 with info. field
DL1_210	LAPB/DL1/DL1_210	67	RNR/P=1 with info. field
DL1_211	LAPB/DL1/DL1_211	68	REJ/P=1 with info. field
DL1_212	LAPB/DL1/DL1_212	68	LONG I/P=0 frame
DL1_213	LAPB/DL1/DL1_213	69	DISC/P=0 with info. field
DL1_214	LAPB/DL1/DL1_214	69	DISC/P=1 with info. field
DL1_215	LAPB/DL1/DL1_215	70	SABM/P=0 with info. field
DL1_301	LAPB/DL1/DL1_301	71	I/P=1
DL1_302	LAPB/DL1/DL1_302	71	RR/P=1
DL1_303	LAPB/DL1/DL1_303	72	RNR/P=1
DL1_304	LAPB/DL1/DL1_304	72	REJ/P=1
DL1_305	LAPB/DL1/DL1_305	73	UA/F=0
DL1_306	LAPB/DL1/DL1_306	73	UA/F=1
DL1_307	LAPB/DL1/DL1_307	74	FRMR/F=0
DL1_308	LAPB/DL1/DL1_308	74	FRMR/F=1
DL1_309	LAPB/DL1/DL1_309	74	I/P=0
DL1_310	LAPB/DL1/DL1_310	75	RR/F=0
DL1_311	LAPB/DL1/DL1_311	75	RNR/F=0
DL1_312	LAPB/DL1/DL1_312	75	REJ/F=0
DL1_313	LAPB/DL1/DL1_313	76	RR/F=1
DL1_314	LAPB/DL1/DL1_314	76	RNR/F=1
DL1_315	LAPB/DL1/DL1_315	76	REJ/F=1
DL1_316	LAPB/DL1/DL1_316	77	RR/P=0
DL1_317	LAPB/DL1/DL1_317	77	RNR/P=0
DL1_318	LAPB/DL1/DL1_318	77	REJ/P=0
DL1_319	LAPB/DL1/DL1_319	78	I/P=0 with no info. field

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Test Case Identifier	Test Case Reference	Page	Description
DL2_101	LAPB/DL2/DL2_101	79	DISC/P=0
DL2_102	LAPB/DL2/DL2_102	80	DISC/P=1
DL2_103	LAPB/DL2/DL2_103	80	SABM/P=0
DL2_104	LAPB/DL2/DL2_104	81	SABM/P=1
DL2_105	LAPB/DL2/DL2_105	81	Proper DM
DL2_106	LAPB/DL2/DL2_106	82	DM/F=0
DL2_107	LAPB/DL2/DL2_107	82	Proper UA
DL2_201	LAPB/DL2/DL2_201	83	Undefined command
DL2_202	LAPB/DL2/DL2_202	83	Undefined response
DL2_203	LAPB/DL2/DL2_203	84	DISC/P=0 with info. field
DL2_204	LAPB/DL2/DL2_204	84	SABM/P=1 with info. field
DL2_205	LAPB/DL2/DL2_205	85	UA with info. field
DL2_206	LAPB/DL2/DL2_206	85	DM with info. field
DL2_207	LAPB/DL2/DL2_207	86	LONG I/P=1 frame
DL2_208	LAPB/DL2/DL2_208	86	RR/P=1 with info. field
DL2_209	LAPB/DL2/DL2_209	86	RNR/P=1 with info. field
DL2_210	LAPB/DL2/DL2_210	87	REJ/P=1
DL2_211	LAPB/DL2/DL2_211	87	Invalid address
DL2_212	LAPB/DL2/DL2_212	87	DISC with FCS error
DL2_213	LAPB/DL2/DL2_213	88	Invalid DM/F=1 (1980)
DL2_214	LAPB/DL2/DL2_214	88	UA with invalid F bit
DL2_301	LAPB/DL2/DL2_301	89	RR/P=1
DL2_302	LAPB/DL2/DL2_302	89	RR/P=0
DL2_303	LAPB/DL2/DL2_303	89	RNR/P=1
DL2_304	LAPB/DL2/DL2_304	90	RNR/P=0
DL2_305	LAPB/DL2/DL2_305	90	REJ/P=1
DL2_306	LAPB/DL2/DL2_306	90	REJ/P=0
DL2_307	LAPB/DL2/DL2_307	91	FRMR/F=0
DL2_308	LAPB/DL2/DL2_308	91	RR/F=1
DL2_309	LAPB/DL2/DL2_309	91	RR/F=0
DL2_310	LAPB/DL2/DL2_310	92	RNR/F=1
DL2_311	LAPB/DL2/DL2_311	92	RNR/F=0
DL2_312	LAPB/DL2/DL2_312	92	REJ/F=1
DL2_313	LAPB/DL2/DL2_313	93	REJ/F=0
DL2_314	LAPB/DL2/DL2_314	93	FRMR/F=1
DL2_315	LAPB/DL2/DL2_315	93	I/P=0
DL2_316	LAPB/DL2/DL2_316	94	I/P=1
DL2_317	LAPB/DL2/DL2_317	94	I/P=0 with no info. field

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Test Case Identifier	Test Case Reference	Page	Description
DL3_101	LAPB/DL3/DL3_101	95	SABM/P=0
DL3_102	LAPB/DL3/DL3_102	96	SABM/P=1
DL3_103	LAPB/DL3/DL3_103	96	DISC/P=0
DL3_104	LAPB/DL3/DL3_104	97	DISC/P=1
DL3_105	LAPB/DL3/DL3_105	97	Proper UA
DL3_106	LAPB/DL3/DL3_106	97	DM with invalid F bit
DL3_107	LAPB/DL3/DL3_107	98	DM/F=1
DL3_201	LAPB/DL3/DL3_201	99	Undefined command
DL3_202	LAPB/DL3/DL3_202	99	Undefined response
DL3_203	LAPB/DL3/DL3_203	100	UA with info. field
DL3_204	LAPB/DL3/DL3_204	100	DISC/P=0 with info. field
DL3_205	LAPB/DL3/DL3_205	101	SABM/P=1 with info. field
DL3_206	LAPB/DL3/DL3_206	101	DM with info. field
DL3_207	LAPB/DL3/DL3_207	102	LONG I/P=1 frame
DL3_208	LAPB/DL3/DL3_208	102	I/P=0 with no info. field
DL3_209	LAPB/DL3/DL3_209	102	RR/P=1 with info. field
DL3_210	LAPB/DL3/DL3_210	103	RNR/P=1 with info. field
DL3_211	LAPB/DL3/DL3_211	103	REJ/P=1 with info. field
DL3_212	LAPB/DL3/DL3_212	104	Invalid address
DL3_213	LAPB/DL3/DL3_213	104	SABM/P=1 with FCS error
DL3_214	LAPB/DL3/DL3_214	105	DM with invalid F (1980)
DL3_215	LAPB/DL3/DL3_215	105	UA with invalid F bit
DL3_301	LAPB/DL3/DL3_301	106	RR/P=1
DL3_302	LAPB/DL3/DL3_302	106	RR/P=0
DL3_303	LAPB/DL3/DL3_303	107	RR/F=1
DL3_304	LAPB/DL3/DL3_304	107	RR/F=0
DL3_305	LAPB/DL3/DL3_305	107	FRMR/F=0
DL3_306	LAPB/DL3/DL3_306	108	FRMR/F=1
DL3_307	LAPB/DL3/DL3_307	108	I/P=0
DL3_308	LAPB/DL3/DL3_308	108	I/P=1
DL3_309	LAPB/DL3/DL3_309	109	RNR/P=0
DL3_310	LAPB/DL3/DL3_310	109	RNR/F=0
DL3_311	LAPB/DL3/DL3_311	109	RNR/P=1
DL3_312	LAPB/DL3/DL3_312	110	REJ/P=0
DL3_313	LAPB/DL3/DL3_313	110	REJ/F=0
DL3_314	LAPB/DL3/DL3_314	110	REJ/P=1
DL3_315	LAPB/DL3/DL3_315	111	RNR/F=1
DL3_316	LAPB/DL3/DL3_316	111	REJ/F=1

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Test Case Identifier	Test Case Reference	Page	Description
DL4_101	LAPB/DL4/DL4_101	112	DISC/P=1
DL4_102	LAPB/DL4/DL4_102	112	SABM/P=1
DL4_103	LAPB/DL4/DL4_103	113	FRMR/F=0
DL4_104	LAPB/DL4/DL4_104	114	I/P=0 frame acknowledged
DL4_105	LAPB/DL4/DL4_105	115	I/P=1 frame acknowledged
DL4_106	LAPB/DL4/DL4_106	115	RR/P=1
DL4_107	LAPB/DL4/DL4_107	116	REJ/P=1
DL4_108	LAPB/DL4/DL4_108	117	REJ/P=0
DL4_109	LAPB/DL4/DL4_109	117	REJ/F=0
DL4_110	LAPB/DL4/DL4_110	118	DM/F=0
DL4_111	LAPB/DL4/DL4_111	118	I frame with N(S) error
DL4_112	LAPB/DL4/DL4_112	119	I/P=0 with no info. field
DL4_113	LAPB/DL4/DL4_113	120	Single flag between frames
DL4_114	LAPB/DL4/DL4_114	121	Window rotation test
DL4_115	LAPB/DL4/DL4_115	121	DISC/P=0
DL4_116	LAPB/DL4/DL4_116	122	SABM/P=0
DL4_117	LAPB/DL4/DL4_117	122	RR/P=0
DL4_118	LAPB/DL4/DL4_118	123	RR/F=0
DL4_119	LAPB/DL4/DL4_119	123	Busy condition test
DL4_201	LAPB/DL4/DL4_201	125	UA/F=0
DL4_202	LAPB/DL4/DL4_202	125	UA/F=1
DL4_203	LAPB/DL4/DL4_203	126	FRMR/F=1
DL4_204	LAPB/DL4/DL4_204	126	unsolicited DM/F=1
DL4_205	LAPB/DL4/DL4_205	127	I with invalid N(R)
DL4_206	LAPB/DL4/DL4_206	127	LONG I/P=0 frame
DL4_207	LAPB/DL4/DL4_207	128	Undefined command
DL4_208	LAPB/DL4/DL4_208	128	Undefined response
DL4_209	LAPB/DL4/DL4_209	129	DM/F=0 with info. field
DL4_210	LAPB/DL4/DL4_210	129	DISC/P=0 with info. field
DL4_211	LAPB/DL4/DL4_211	130	SABM/P=1 with info. field
DL4_212	LAPB/DL4/DL4_212	130	UA/F=0 with info. field
DL4_213	LAPB/DL4/DL4_213	131	RR/F=0 with info. field
DL4_214	LAPB/DL4/DL4_214	131	RNR/F=0 with info. field
DL4_215	LAPB/DL4/DL4_215	132	REJ/F=0 with info. field
DL4_216	LAPB/DL4/DL4_216	132	RR/P=1 with info. field
DL4_217	LAPB/DL4/DL4_217	133	RNR/P=1 with info. field
DL4_218	LAPB/DL4/DL4_218	133	REJ/P=1 with info. field
DL4_219	LAPB/DL4/DL4_219	134	I frame with FCS error
DL4_220	LAPB/DL4/DL4_220	134	Incorrect address
DL4_221	LAPB/DL4/DL4_221	135	Frame too short
DL4_222	LAPB/DL4/DL4_222	135	Aborted I frame
DL4_301	LAPB/DL4/DL4_301	136	Unsolicited RR/F=1 response
DL4_302	LAPB/DL4/DL4_302	136	Unsolicited RNR/F=1 response
DL4_303	LAPB/DL4/DL4_303	137	Unsolicited REJ/F=1 response

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Test Case Identifier	Test Case Reference	Page	Description
DL5_101	LAPB/DL5/DL5_101	138	DISC/P=1 from tester
DL5_102	LAPB/DL5/DL5_102	138	SABM/P=1 from tester
DL5_103	LAPB/DL5/DL5_103	138	FRMR/F=0 from tester
DL5_104	LAPB/DL5/DL5_104	139	DM/F=0
DL5_105	LAPB/DL5/DL5_105	139	UA/F=0
DL5_106	LAPB/DL5/DL5_106	139	SABM/P=0 from tester
DL5_201	LAPB/DL5/DL5_201	140	I with invalid N(R)
DL5_202	LAPB/DL5/DL5_202	140	Undefined command
DL5_203	LAPB/DL5/DL5_203	141	Undefined response
DL5_204	LAPB/DL5/DL5_204	141	SABM/P=1 with info. field
DL5_205	LAPB/DL5/DL5_205	142	DISC/P=1 with info. field
DL5_206	LAPB/DL5/DL5_206	142	RR/P=1 with info. field
DL5_207	LAPB/DL5/DL5_207	143	RNR/P=1 with info. field
DL5_208	LAPB/DL5/DL5_208	143	REJ/P=1 with info. field
DL5_209	LAPB/DL5/DL5_209	144	UA/F=0 with info field
DL5_210	LAPB/DL5/DL5_210	144	DM/F=0 with info. field
DL5_211	LAPB/DL5/DL5_211	144	RR/F=0 with info. field
DL5_212	LAPB/DL5/DL5_212	145	RNR/F=0 with info. field
DL5_213	LAPB/DL5/DL5_213	145	REJ/F=0 with info. field
DL5_214	LAPB/DL5/DL5_214	145	Unsolicited UA/F=0
DL5_215	LAPB/DL5/DL5_215	146	Unsolicited UA/F=1
DL5_216	LAPB/DL5/DL5_216	146	Unsolicited DM/F=1
DL5_217	LAPB/DL5/DL5_217	146	Incorrect address
DL5_218	LAPB/DL5/DL5_218	147	SABM with FCS error
DL5_219	LAPB/DL5/DL5_219	147	LONG I/P=0 frame
DL5_301	LAPB/DL5/DL5_301	148	I/P=0
DL5_302	LAPB/DL5/DL5_302	148	I/P=1
DL5_303	LAPB/DL5/DL5_303	149	RR/P=1
DL5_304	LAPB/DL5/DL5_304	149	RNR/P=1
DL5_305	LAPB/DL5/DL5_305	150	REJ/P=1
DL5_306	LAPB/DL5/DL5_306	150	RR/P=0
DL5_307	LAPB/DL5/DL5_307	151	RNR/P=0
DL5_308	LAPB/DL5/DL5_308	151	REJ/P=0
DL5_309	LAPB/DL5/DL5_309	152	RR/F=1
DL5_310	LAPB/DL5/DL5_310	152	RNR/F=1
DL5_311	LAPB/DL5/DL5_311	152	REJ/F=1
DL5_312	LAPB/DL5/DL5_312	153	RR/F=0
DL5_313	LAPB/DL5/DL5_313	153	RNR/F=0
DL5_314	LAPB/DL5/DL5_314	153	REJ/F=0
DL5_315	LAPB/DL5/DL5_315	154	I/P=0 with no info. field
DL5_316	LAPB/DL5/DL5_316	154	I with N(s) error

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Test Case Identifier	Test Case Reference	Page	Description
DL6_101	LAPB/DL6/DL6_101	155	DISC/P=1 from tester
DL6_102	LAPB/DL6/DL6_102	155	SABM/P=1 from tester
DL6_103	LAPB/DL6/DL6_103	156	I/P=1
DL6_104	LAPB/DL6/DL6_104	156	RR/P=0
DL6_105	LAPB/DL6/DL6_105	157	RR/P=1
DL6_106	LAPB/DL6/DL6_106	157	RNR/P=0
DL6_107	LAPB/DL6/DL6_107	158	RNR/P=1
DL6_108	LAPB/DL6/DL6_108	158	DM/F=0
DL6_109	LAPB/DL6/DL6_109	159	DISC/P=0
DL6_110	LAPB/DL6/DL6_110	159	SABM/P=0
DL6_111	LAPB/DL6/DL6_111	160	RR/F=0
DL6_112	LAPB/DL6/DL6_112	160	RNR/F=0
DL6_201	LAPB/DL6/DL6_201	161	UA/F=0
DL6_202	LAPB/DL6/DL6_202	161	UA/F=1
DL6_203	LAPB/DL6/DL6_203	162	FRMR/F=0
DL6_204	LAPB/DL6/DL6_204	162	FRMR/F=1
DL6_205	LAPB/DL6/DL6_205	163	Unsolicited DM/F=1 frame
DL6_206	LAPB/DL6/DL6_206	163	I with invalid N(R)
DL6_207	LAPB/DL6/DL6_207	164	LONG I/P=0 frame
DL6_208	LAPB/DL6/DL6_208	164	Undefined command
DL6_209	LAPB/DL6/DL6_209	165	Undefined response
DL6_210	LAPB/DL6/DL6_210	165	DM/F=0 with info. field
DL6_211	LAPB/DL6/DL6_211	166	DISC/P=0 with info. field
DL6_212	LAPB/DL6/DL6_212	166	SABM/P=1 with info. field
DL6_213	LAPB/DL6/DL6_213	167	UA/F=0 with info. field
DL6_214	LAPB/DL6/DL6_214	167	RR/F=0 with info. field
DL6_215	LAPB/DL6/DL6_215	168	RNR/F=0 with info. field
DL6_216	LAPB/DL6/DL6_216	168	REJ/F=0 with info. field
DL6_217	LAPB/DL6/DL6_217	169	RR/P=1 with info. field
DL6_218	LAPB/DL6/DL6_218	169	RNR/P=1 with info. field
DL6_219	LAPB/DL6/DL6_219	170	REJ/P=1 with info. field
DL6_220	LAPB/DL6/DL6_220	170	I/P=0
DL6_221	LAPB/DL6/DL6_221	171	I/P=1
DL6_222	LAPB/DL6/DL6_222	171	I with N(S) error
DL6_223	LAPB/DL6/DL6_223	172	Incorrect address
DL6_224	LAPB/DL6/DL6_224	172	RR/P=1 with FCS error
DL6_225	LAPB/DL6/DL6_225	173	I/P=0 with no info. field
DL6_301	LAPB/DL6/DL6_301	174	Unsolicited RR/F=1 response
DL6_302	LAPB/DL6/DL6_302	174	Unsolicited RNR/F=1 response
DL6_303	LAPB/DL6/DL6_303	175	Unsolicited REJ/F=1 response

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Test Case Identifier	Test Case Reference	Page	Description
DL7_101	LAPB/DL7/DL7_101	176	DISC/P=1
DL7_102	LAPB/DL7/DL7_102	176	SABM/P=1
DL7_103	LAPB/DL7/DL7_103	177	I/P=0
DL7_104	LAPB/DL7/DL7_104	177	I/P=1
DL7_105	LAPB/DL7/DL7_105	178	REJ/P=0
DL7_106	LAPB/DL7/DL7_106	178	REJ/P=1
DL7_107	LAPB/DL7/DL7_107	179	DM/F=0
DL7_108	LAPB/DL7/DL7_108	179	I/P=0 with no info. field
DL7_109	LAPB/DL7/DL7_109	180	DISC/P=0
DL7_110	LAPB/DL7/DL7_110	180	SABM/P=0
DL7_111	LAPB/DL7/DL7_111	181	REJ/F=0
DL7_201	LAPB/DL7/DL7_201	182	UA/F=0
DL7_202	LAPB/DL7/DL7_202	182	UA/F=1
DL7_203	LAPB/DL7/DL7_203	183	FRMR/F=0
DL7_204	LAPB/DL7/DL7_204	183	FRMR/F=1
DL7_205	LAPB/DL7/DL7_205	184	DM/F=1
DL7_206	LAPB/DL7/DL7_206	184	I with invalid N(R)
DL7_207	LAPB/DL7/DL7_207	185	LONG I/P=0 frame
DL7_208	LAPB/DL7/DL7_208	185	Undefined command
DL7_209	LAPB/DL7/DL7_209	186	Undefined response
DL7_210	LAPB/DL7/DL7_210	186	DM/F=0 with info. field
DL7_211	LAPB/DL7/DL7_211	187	DISC/P=0 with info. field
DL7_212	LAPB/DL7/DL7_212	187	SABM/P=1 with info. field
DL7_213	LAPB/DL7/DL7_213	188	UA/F=0 with info. field
DL7_214	LAPB/DL7/DL7_214	188	RR/F=0 with info. field
DL7_215	LAPB/DL7/DL7_215	189	RNR/F=0 with info. field
DL7_216	LAPB/DL7/DL7_216	189	REJ/F=0 with info. field
DL7_217	LAPB/DL7/DL7_217	190	RR/P=1 with info. field
DL7_218	LAPB/DL7/DL7_218	190	RNR/P=1 with info. field
DL7_219	LAPB/DL7/DL7_219	191	REJ/P=1 with info. field
DL7_220	LAPB/DL7/DL7_220	191	Incorrect address
DL7_221	LAPB/DL7/DL7_221	192	I frame with FCS error
DL7_222	LAPB/DL7/DL7_222	192	I frame with N(S) error
DL7_301	LAPB/DL7/DL7_301	193	Unsolicited RR/F=1 response
DL7_302	LAPB/DL7/DL7_302	193	Unsolicited RNR/F=1 response
DL7_303	LAPB/DL7/DL7_303	194	Unsolicited REJ/F=1 response

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Test Case Identifier	Test Case Reference	Page	Description
DL8_1_101	LAPB/DL8/DL8_1_101	195	DM/F=0 retransmission
DL8_1_102	LAPB/DL8/DL8_1_102	196	N2 attempts for DM/F=0 transmission
DL8_2_101	LAPB/DL8/DL8_2_101	197	SABM retransmission
DL8_2_102	LAPB/DL8/DL8_2_102	197	N2 attempts for SABM transmission
DL8_3_101	LAPB/DL8/DL8_3_101	198	DISC retransmission
DL8_3_102	LAPB/DL8/DL8_3_102	199	N2 attempts for DISC transmission
DL8_4_101	LAPB/DL8/DL8_4_101	200	I frame acknowledgement
DL8_4_102	LAPB/DL8/DL8_4_102	201	One ack. lost out of two
DL8_4_103	LAPB/DL8/DL8_4_103	202	Correct use of N2 parameter
DL8_5_101	LAPB/DL8/DL8_5_101	203	REJ retransmission
DL8_5_102	LAPB/DL8/DL8_5_102	203	N2 attempts for REJ/P=1 transmission
DL8_6_101	LAPB/DL8/DL8_6_101	204	FRMR retransmission
DL8_6_102	LAPB/DL8/DL8_6_102	204	N2 attempts for FRMR transmission

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Test Step Identifier	Test Step Reference	Page	Description
DL1_STATE #	LAPB/CommonLib/ Preamble/DL1_STATE	33	Preamble for DL1
DL2_STATE #	LAPB/CommonLib/ Preamble/DL2_STATE	34	Preamble for DL2
DL3_STATE #	LAPB/CommonLib/ Preamble/DL3_STATE	38	Preamble for DL3
DL4_STATE #	LAPB/CommonLib/ Preamble/DL4_STATE	43	Preamble for DL4
DL5_STATE #	LAPB/CommonLib/ Preamble/DL5_STATE	46	Preamble for DL5
DL6_STATE #	LAPB/CommonLib/ Preamble/DL6_STATE	47	Preamble for DL6
DL7_STATE #	LAPB/CommonLib/ Preamble/DL7_STATE	48	Preamble for DL7
DL1_CHK #	LAPB/CommonLib/ Verification/DL1_CHK	49	Verification for DL1
DL2_CHK #	LAPB/CommonLib/ Verification/DL2_CHK	49	Verification for DL2
DL3_CHK #	LAPB/CommonLib/ Verification/DL3_CHK	49	Verification for DL3
DL4_CHK1 #	LAPB/CommonLib/ Verification/DL4_CHK1	50	Verification for DL4 (1)
DL4_CHK2 #	LAPB/CommonLib/ Verification/DL4_CHK2	50	Verification for DL4 (2)
DL5_CHK #	LAPB/CommonLib/ Verification/DL5_CHK	51	Verification for DL5
DL6_CHK #	LAPB/CommonLib/ Verification/DL6_CHK	51	Verification for DL6
DL7_CHK #	LAPB/CommonLib/ Verification/DL7_CHK	51	Verification for DL7
HANDLE_IUT_DISC #	LAPB/CommonLib/ Preamble/HANDLE_IUT_DISC	36	Handle DISC from IUT
RECV_DISC #	LAPB/CommonLib/ Preamble/RECV_DISC	37	Receive DISC from IUT
INIT_LINK	LAPB/CommonLib/INIT_LINK	56	Initialize the link
IUT_SENDS_I_FRAMES # (N:INTEGER; # ACK:BOOLEAN)	LAPB/CommonLib/ IUT_SENDS_I_FRAMES	57	IUT sends I frames
RECEIVE_SOME_SUP_ # FRAME	LAPB/CommonLib/ RECEIVE_SOME_SUP_FRAME	58	Receive some supervisory-frame
RESP_TO_DISC #	LAPB/CommonLib/ Preamble/RESP_TO_DISC	42	Tester sends response to DISC.
REQ_INIT #	LAPB/CommonLib/ Preamble/REQ_INIT	42	Request link set-up from IUT.
DL2_DM_IUT #	LAPB/Commonlib/ Preamble/DL2_DM_IUT	36	Subtree for operator action in DL2_STATE.
DL3_DM_IUT #	LAPB/Commonlib/ Preamble/DL3_DM_IUT	41	Subtree for operator action in DL3_STATE.
DL4_DM_IUT #	LAPB/Commonlib/ Preamble/DL4_DM_IUT	45	Subtree for operator action in DL4_STATE.

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Test Step Identifier	Test Step Reference	Page	Description
ACCEPTABLE_ # UNEXPECTED_DL4	LAPB/CommonLib/ACCEPTABLE_ UNEXPECTED_DL4	54	Acceptable unexpected frames in DL4.
ACCEPTABLE_ # UNEXPECTED_DL6	LAPB/CommonLib/ACCEPTABLE_ UNEXPECTED_DL6	54	Acceptable unexpected frames in DL6.
ACCEPTABLE_ # UNEXPECTED_DL7	LAPB/CommonLib/ACCEPTABLE_ UNEXPECTED_DL7	55	Acceptable unexpected frames in DL7.
ACCEPTABLE_ # UNEXPECTED_DL8	LAPB/CommonLib/ACCEPTABLE_ UNEXPECTED_DL8	55	Acceptable unexpected frames in DL8.
IUT_RETRANSMITS_I_ # FRAMES	LAPB/CommonLib/IUT_ RETRANSMITS_I_FRAMES	58	IUT retransmits I frames
NORMAL_INFORMATION # _TRANSFER	LAPB/Commonlib/NORMAL_ INFORMATION_TRANSFER_1	52	Normal information transfer behaviour
NORMAL_INFORMATION # _TRANSFER_2	LAPB/Commonlib/NORMAL_ INFORMATION_TRANSFER_2	53	Normal information transfer behaviour (2)
RECV_CHK # (FLAG:BOOLEAN)	LAPB/Commonlib/RECV_CHK	56	To wait for time TBSY on entering DL4 state.
OTHER_RESPONSE #	LAPB/Commonlib/OTHER_ RESPONSE	59	Inconclusive and unacceptable responses
ACK_ONE_FRAME #	LAPB/DL8/DL8_4_102/ ACK_ONE_FRAME	201	Tester sends an acknowledgement.

4.3 Preamble

The Preamble of a test case consists of the steps required to bring the IUT to the appropriate initial state or phase. There may be various alternative sequences of test steps which can be performed in order to initialize the IUT. The preamble may depend on the test method as well as specific IUT behaviour that can be controlled or observed using that method. Therefore, preambles may be different for different IUTs. In order to properly initialize a test case an appropriate preamble has to be used for testing a particular IUT. An inconclusive verdict in the preamble may be resulted either due to protocol violation or the fact that the preamble is unsuitable for that particular IUT. Subclause 5.4.1 gives examples of preambles to be used as a test initialization sequence. Other valid preambles that may be used are a matter of agreement between the test laboratory and its client.

4.4 Verification sequence

The conclusion of a test case is conducted in the test sequence called a verification sequence. In most cases the verification sequence depends on the final state in which the IUT is expected to be as a result of a test stimulus. A single test case may have more than one possible verification sequence depending on the actual IUT behaviour. Also, like the preamble, the verification sequence may depend on testing method used or may depend on the IUT. Subclause 5.4.2 gives examples of verification sequences to be used as a test conclusion sequence. Other valid verification sequences that may be used are a matter of agreement between the test laboratory and its clients.

4.5 IUT initiated actions

The general principles, with respect to IUT initiated actions required by this test suite, are in accordance with ISO/IEC 8882-1. The ability of the IUT to perform these actions, and its ability to initiate the tests containing the actions, are determined by the information provided in the PIXIT.

4.6 PIXIT proforma

It is essential that the client provide the test laboratory with all the information (in addition to that given in the PICS) that will enable the appropriate test cases to be applied to the IUT. This information is provided in the Protocol Implementation eXtra Information for Testing (PIXIT). This Protocol Implementation eXtra Information for Testing (PIXIT) proforma is related to and dependent on the Protocol Implementation Conformance Statement (PICS) proforma which is being developed as an addendum to ISO 7776.

Table 3 - Protocol Implementation eXtra Information for Testing (PIXIT)

PIXIT			
	GENERAL	**Enter value or check where applicable.**	**Test Suite Parameters**
1.	Classification of IUT, enter one of ISO_7776, X25_1980, X25_1984 strings, if conformance is claimed to ISO 7776, X.25-1980 or X.25-1984 respectively	_____	IUT_TYPE
2.	The value of *k* used by IUT	value:_____	k
3.	The value of the maximum established length (MEL) of the information field of the received I frames (see ISO 7776 clause 4.3.9b)	value:_____	MEL
4.	The value of N2 for IUT	value:_____	N2
5.	The value of T1 parameter used by IUT	value:_____ ms	T1_ONE
	PROCEDURAL INFORMATION		
6.	IUT will initiate transmission of I frames on entering information transfer phase.	Yes [ ] No [ ]	
7a.	IUT can be made to enter the busy condition when required for testing. If yes, specify the time IUT will remain busy.	Yes [ ] No [ ] value:_____ ms	
7b.	Specify if IUT will send RNR after link set-up. If yes, enter the maximum time IUT will be in busy condition, (e.g. this may correspond to a situation where RNR is used while higher level is being set up).	Yes [ ] No [ ] value:_____ ms	Tb
8a.	IUT can be made to initiate link disconnection when required for testing.	Yes [ ] No [ ]	
8b.	Is manual intervention required to initiate link disconnection when required for testing. If yes, specify the time required for this manual intervention.	Yes [ ] No [ ] value:_____ ms	
9.	State the time the tester must wait before determining that the IUT will not respond to a tester stimulus. This value will be tester parameter Td. Note: Td < T1.	value:_____ ms	Td

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PIXIT			
	PROCEDURAL INFORMATION	**Enter value or check where applicable**	**Test Suite Parameters**
10a.	IUT can be made to set-up the link when required for testing. If yes, specify PICS item under "Link set-up (reset) procedure" to be used.	Yes [ ] No [ ] PICS item:_____	
10b.	IUT can request the tester to set-up the link when required.	Yes [ ] No [ ]	
11.	IUT can maintain the disconnected phase as a stable state for a period of time. If yes, specify the time IUT will remain in disconnected phase. During this time period the IUT will not unilaterally send a SABM, DISC or DM frame.	Yes [ ] No [ ] value:_____ ms	STABLE_DP
12.	The IUT can maintain the frame reject condition as a stable state for a period of time. If yes, specify the time IUT will remain in frame reject condition.	Yes [ ] No [ ] value:_____ ms	
13a.	Upon reaching the disconnected phase, will the IUT reply with DM response to all commands received, and not set up the data link until some operator action is taken.	Yes [ ] No [ ]	DMRSP
13b.	Upon reaching the disconnected phase, will the IUT not respond to any stimulus, and not set up the data link until some operator action is taken.	Yes [ ] No [ ]	UNRSP
14.	Where operator action is required (for implicit send events), specify the maximum time required for operator to complete the requested action.	value:_____ sec	TOPERAT-OR
	I FRAME INFORMATION		
15.	Specify in sequence the contents of the information field that the tester is allowed to send to the IUT in information transfer phase. Note that in some tests up to k+1 I frames are sent from the tester.	contents of frames: 1. 2. 3. 4. 5. 6. 7. 8.	UDAT

4.7 Classification of IUT

In this test suite the global variable "IUT_TYPE" is defined. This variable can assume values for ISO 7776, or X.25-1980, or X.25-1984. A Boolean expression is used to test this variable before a test event can apply to one specific standard. If this is not done, then that event applies to all three X.25 standards.

4.8 Method for conformance testing

The method for conformance testing shall be as defined in ISO/IEC 8882-1.

4.9 Acceptable unexpected IUT frames

The test cases in this test suite indicate the frames from the IUT required to satisfy the test purpose. In some cases, particularly in the Information Transfer phase, unexpected frames may be received from the IUT which do not affect the final test verdict.

Acceptable unexpected frames are accepted by the tester without affecting the final test verdict. In the case of RNR, the tester shall suspend the test until the busy condition is cleared (see Table 3, item 7b).

In a controlled environment, DISC and SABM commands and DM responses sent by the IUT are not considered to be acceptable unexpected frames during information transfer tests.

4.10 Transient states

A transient state is an unstable state that may preclude satisfactory conduct of tests contained in clauses 5.5, 5.9, and 5.10. To conduct tests in these clauses the IUT must be capable of:

- Being forced to establish a particular data link condition or phase as part of the test preamble, by using the LAPB procedures as defined in X.25 standards.
- Maintaining the established condition for a period of time sufficient for the tester to initiate and conduct the required test steps in an orderly and observable manner.
- Arriving at a prescribed, predictable condition or phase for the verification of the test, and maintaining that condition for a time sufficient to record the results from the verification sequence.

4.11 Unreachable states

An unreachable state is a state never entered by some IUTs. This may preclude satisfactory conduct of tests contained in clauses 5.6, 5.7, and 5.10.

5 Abstract test suite

5.1 General

This section describes the abstract test suite. This abstract test suite complies with ISO/IEC 9646-3 for TTCN.GR. The test realizer shall comply with the requirements of ISO/IEC 9646-4. In particular, these concern the realization of an Executable Test Suite (ETS) based on the Abstract Test Suite (ATS). Test laboratories running conformance test services for this abstract test suite shall comply with ISO/IEC 9646-5.

The tests described in this test suite may be performed in any order. Test cases are independent of one another. Most of the test cases consist of a preamble followed by a test body and ending with a verification sequence. The preamble consists of the initialization test steps described in clause 5.4.1. The verification sequences consists of the final test step described in clause 5.4.2. In some instances in the test steps, all the possible parameter alternatives for PDUs are not verified, as they do not directly relate to the test purpose.

The preambles shown in this part of ISO/IEC 8882 are examples of how, for different situations, the tester can get the IUT into the desired phase or state. These preambles are not meant to be either a mandatory or exhaustive set of acceptable initialization sequences for the IUT. Other possible preambles may be negotiated between the test laboratory and the client. The following example illustrates an abstract test case in TTCN:

Example:

```
TEST_TREE_NAME

        + preamble_1 [IUT_TYPE=option_1]

          :
          :
        + preamble_n [IUT_TYPE=option_n]

                + test_body_part_1

                        + verification_1

                !PDU_X
                    ?PDU_Y [[IUT_TYPE=option_2] OR
#                   [IUT_TYPE=option_n]] (VARIABLE:=1)
                        + verification_2
                :
                + test_body_part_n

                        + verification_n
```

Notes:

1) The '+' symbol indicates the attachment of a TTCN tree.
2) Trees attached at the same level of indentation are alternatives.
3) Event line starting with ! is a send event in TTCN.
4) Event line starting with ? is a receive event in TTCN.
5) A line starting with # is a continuation line in TTCN.
6) The operation := is an assignment in TTCN.

5.2 Declarations

The purpose of TTCN declarations is to describe the set of test events and all other attributes to be used in the test suite. For further information on TTCN declarations see ISO/IEC 9646-3.

For the X.25 Data Link Layer test suite, the declarations are based on Protocol Data Units (PDUs) defined in OSI Basic Reference Model [ISO 7498], which are called "frames" in the X.25 standards. The PDUs are declared with a set of PDU parameters that may be assigned values for the purpose of testing. The PDU constraints (specified in clause 5.3) are the list of values that the PDU parameters must take in a particular test event.

The improper PDUs are declared only for the purpose of use within ISO/IEC 8882. It is recognized that many variations are possible in an improper PDU, all of which may cause the same reaction from the IUT. It is not practical to exhaustively list all these variations. To preserve the flexibility of improper PDU encoding, ISO/IEC 8882 shows some typical examples.

The FCS octets are not shown in the data type declarations in this section.

PDU TYPE DECLARATION		
PDU NAME: **DISC**	PCO TYPE: LSAP	COMMENTS: Disconnect
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
DISC_H (Control field high)	Bitstring	Higher order bits of control field.
P (Poll bit)	Bitstring	Single bit within control field
DISC_L (Control field low)	Bitstring	Lower order bits of control field.

PDU TYPE DECLARATION		
PDU NAME: **SABM**	PCO TYPE: LSAP	COMMENTS: Set Asynchronous Balanced Mode. Used in basic (modulo 8) mode.
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
SABM_H (Control field high)	Bitstring	Higher order bits of control field.
P (Poll bit)	Bitstring	
SABM_L (Control field low)	Bitstring	Lower order bits of control field.

PDU TYPE DECLARATION		
PDU NAME: **UA**	PCO TYPE: LSAP	COMMENTS: Unnumbered acknowledgement
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
UA_H (Control field high)	Bitstring	Higher order bits of control field.
F (Final bit)	Bitstring	
UA_L (Control field low)	Bitstring	Lower order bits of control field.

PDU TYPE DECLARATION		
PDU NAME: **DM**	PCO TYPE: LSAP	COMMENTS: Disconnected Mode
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
DM_H (Control field high)	Bitstring	Higher order bits of control field.
F (Final bit)	Bitstring	
DM_L (Control field low)	Bitstring	Lower order bits of control field.

PDU TYPE DECLARATION		
PDU NAME: **FRMR**	PCO TYPE: LSAP	COMMENTS: Frame Reject
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
FRMR_H (Control field high)	Bitstring	Higher order bits of control field.
F (Final bit)	Bitstring	
FRMR_L (Control field low)	Bitstring	Lower order bits of control field.
FRMR_I	Group	Part of FRMR information field.

PDU FIELD GROUP TYPE DECLARATION	
FIELD GROUP NAME: FRMR_I	COMMENTS: Part of FRMR information field
PDU FIELD INFORMATION	

FIELD NAME	TYPE	COMMENTS
RCF (Rejected control field)	Octetstring	
BIT9 (Bit 9)	Bitstring	
VS (Send state variable)	Integer	
CR (Command/Response)	Bitstring	
VR (Receive state variable)	Integer	
ZYXW (ZYXW bits)	Bitstring	
BIT21_24 (Bits 21 to 24)	Bitstring	

PDU TYPE DECLARATION		
PDU NAME: **RR**	PCO TYPE: LSAP	COMMENTS: Receive Ready
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF(Poll/Final bit)	Bitstring	
RR_CF (Control field low)	Bitstring	Lower order bits of control field

PDU TYPE DECLARATION		
PDU NAME: **RNR**	PCO TYPE: LSAP	COMMENTS: Receive Not Ready
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF(Poll/Final bit)	Bitstring	
RNR_CF (Control field low)	Bitstring	Lower order bits of control field

PDU TYPE DECLARATION		
PDU NAME: **REJ**	PCO TYPE: LSAP	COMMENTS: Reject
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF(Poll/Final bit)	Bitstring	
REJ_CF (Control field low)	Bitstring	Lower order bits of control field

PDU TYPE DECLARATION		
PDU NAME: **I**	PCO TYPE: LSAP	COMMENTS: Information
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
P (Poll bit)	Bitstring	
NS (Send seq.)	Integer	Due to lack of conversion functions, NS is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
I_L (Control field low)	Bitstring	
UD (User Data)	Octetstring	

PDU TYPE DECLARATION		
PDU NAME: **LONG**	PCO TYPE: LSAP	COMMENTS: This must be an I frame with an information field which exceeds the maximum established length.
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
P (Poll bit)	Bitstring	
NS (Send seq.)	Integer	Due to lack of conversion functions, NS is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
LONG_L (Control field low)	Bitstring	
UD (User Data)	Octetstring	

PDU TYPE DECLARATION		
PDU NAME: **RR_L**	PCO TYPE: LSAP	COMMENTS: Receive Ready with single octet information field
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF(Poll/Final bit)	Bitstring	
RR_CF (Control field low)	Bitstring	Lower order bits of control field.
INFO	Octetstring	Added information field

PDU TYPE DECLARATION		
PDU NAME: **RNR_L**	PCO TYPE: LSAP	COMMENTS: Receive Not Ready with single octet information field
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF(Poll/Final bit)	Bitstring	
RNR_CF (Control field low)	Bitstring	Lower order bits of control field.
INFO	Octetstring	Added information field.

PDU TYPE DECLARATION		
PDU NAME: **REJ_L**	PCO TYPE: LSAP	COMMENTS: Reject with single octet information field.
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
A (Address)	Octetstring	
NR (Receive seq.)	Integer	Due to lack of conversion functions, NR is declared as integer (range of 0-7), but it is bitstring of length 3 as described in ISO 7776.
#		
#		
PF (Poll/Final bit)	Bitstring	
REJ_CF (Control field low)	Bitstring	Lower order bits of control field.
INFO	Octetstring	Added information field.

PDU TYPE DECLARATION		
PDU NAME: **ABORT**	PCO TYPE: LSAP	COMMENTS: No closing flag, abort sequence shall be appended to the string.
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
String	Octetstring	

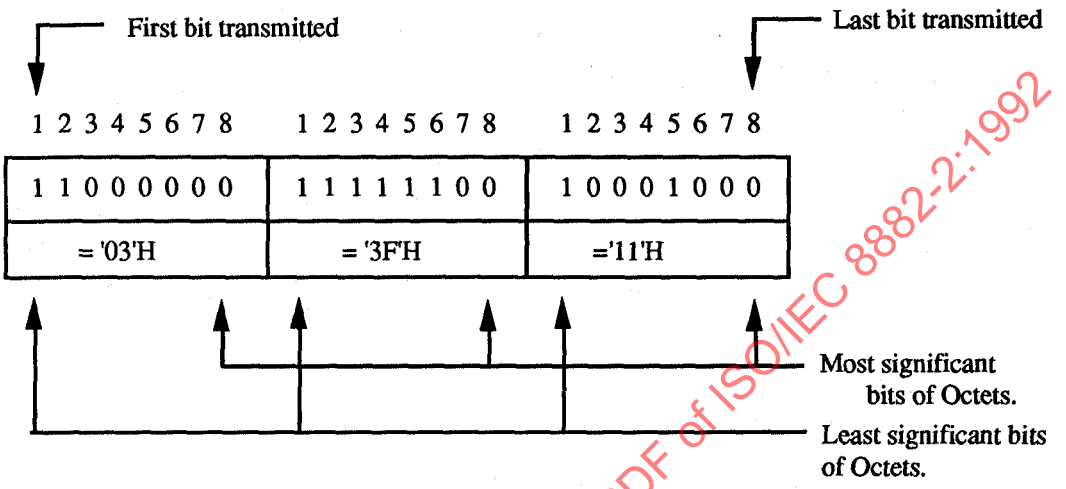
PDU TYPE DECLARATION		
PDU NAME: **HEX**	PCO TYPE: LSAP	COMMENTS: Hexadecimal string
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
String	Octetstring	Maximum length of 3 octets.

PDU TYPE DECLARATION		
PDU NAME: **FCS_ERROR**	PCO TYPE: LSAP	COMMENTS: A PDU in which an error is introduced in the FCS octets.
PDU FIELD INFORMATION		
FIELD NAME	TYPE	COMMENTS
String	Octetstring	Maximum length of 3 octets.

5.2.1 Order of bit transmission

The order of bit transmission for the PDUs in the declarations above shall be as defined in the X.25 standards. The order of bit transmission for PDUs in the declarations for ABORT, HEX and FCS_ERROR is illustrated in the example below:

Example - Hex (String:='033F11'H)



Note - This example does not show flags, FCS fields, and bits inserted for transparency.

5.2.2 Test suite parameters

This section defines constants derived from the PICS or PIXIT which globally parametrise the test suite. These constants are referred to as test suite parameters.

TEST SUITE PARAMETERS			
NAME	TYPE	PICS/PIXIT REFERENCE	COMMENTS
T1_ONE	Integer	from PIXIT 4.6 item 5	Duration of timer T1
T1_TWO	Integer	from PIXIT 4.6 item 5	Twice the duration of timer T1
T1_HALF	Integer	from PIXIT 4.6 item 5	Half the duration of timer T1, rounded up
#			
Tb	Integer	from PIXIT 4.6 item 7b	Maximum busy time
Td	Integer	from PIXIT 4.6 item 9	
Md	Integer	from PICS	Value of modulus (for this test suite modulus=8)
#			
MEL	Integer	from PIXIT 4.6 item 3	
N2	Integer	from PIXIT 4.6 item 4	
k	Integer	from PIXIT 4.6 item 2	This is the maximum number of outstanding I frames (*k*)
#			
STABLE_DP	Boolean	from PIXIT 4.6 item 11	
IUT_TYPE	IA5string	from PIXIT 4.6 item 1	
DMRSP	Boolean	from PIXIT 4.6 item 13a	
UNRSP	Boolean	from PIXIT 4.6 item 13b	
COLLISION_CASE	Integer	from PICS	
FRITa	IA5string	from PICS	
FRITb	IA5string	from PICS	
TOPERATOR	Integer	from PIXIT 4.6 item 14	Duration of the operator timer
UDAT	Octetstring	from PIXIT 4.6 item 15	In test cases where the tester transmits I-frames, the user data field shall be obtained and be used in the order which is provided in the PIXIT.
#			
#			
#			
#			
ULON	Octetstring	from PIXIT 4.6 item 3	User specified octet string, one octet longer than MEL.
#			

The following are a set of global variables used in the test suite but their scope is defined to be local to the test case.

TEST CASE VARIABLES			
NAME	TYPE	VALUE	COMMENTS
V_S	Integer		See PICS
V_R	Integer		See PICS
P_F_BIT	Bitstring		Used to keep track of P/F bit received
Z_W	Bitstring		Used to keep the previous value of ZYXW bits.
#			
IR	Integer		Used to keep track of frames received by the IUT.
#			
IS	Integer		Used to keep track of frames sent by the IUT.
#			
FLAG	Boolean		Used to indicate whether acknowledgement is to be sent.
#			
TOT_STEP	Integer	0	Used to keep track of window rotation.
STEP	Integer	0	Counter for repeat statements.

5.2.3 Other declarations

PCO TYPE DECLARATIONS			
NAME	TYPE	ROLE	COMMENTS
L #	LSAP	LT	Service access point at lower tester, for data link layer testing.

ASP TYPE DECLARATION		
ASP NAME: **STACK**	PCO TYPE: LSAP	COMMENTS: Single flag between frames to be stacked at tester.
SERVICE PARAMETER INFORMATION		
PARAMETER NAME	TYPE	COMMENTS
fm1 fm2	Octetstring Octetstring	First frame in stack Second frame in stack

ASP TYPE DECLARATION		
ASP NAME: **SEND**	PCO TYPE: LSAP	COMMENTS: Single flag between frames to be sent from STACK.
SERVICE PARAMETER INFORMATION		
PARAMETER NAME	TYPE	COMMENTS
fm1 fm2	Octetstring Octetstring	First frame sent Second frame sent

TIMER DECLARATIONS			
TIMER NAME	DURATION	UNITS	COMMENTS
T1 #	T1_ONE	ms	T1_ONE is a system parameter equal to duration of timer T1.
TMO1 #	Td	ms	Tester timeout waiting IUT response. The value of Td is obtained from PIXIT.
TBSY #	Tb	ms	This timer is intended to be used for IUT busy immediately after entering information transfer phase.
TWO_T1 #	T1_TWO	ms	T1_TWO is a system parameter equal to twice the duration of timer T1.
HALF_T1 #	T1_HALF	ms	T1_HALF is a system parameter equal to half the duration of timer T1, rounded up.
TOPR #	TOPERATOR	sec	The time required for the operator action on the implicit send events.

5.3 Constraints declarations

In this clause the coding of PDU parameters is described using the tabular method.

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **DISC**					
	FIELD NAME				
CONSTRAINT NAME	A	DISC_H	P	DISC_L	COMMENTS
DISC_10	'01'O	'010'B	'0'B	'0011'B	
DISC_11	'01'O	'010'B	'1'B	'0011'B	
DISC_12	'01'O	'010'B	?	'0011'B	
DISC_30	'03'O	'010'B	'0'B	'0011'B	
DISC_31	'03'O	'010'B	'1'B	'0011'B	
DISC_40	'04'O	'010'B	'0'B	'0011'B	Invalid address

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **SABM**					
	FIELD NAME				
CONSTRAINT NAME	A	SABM_H	P	SABM_L	COMMENTS
SABM_10	'01'O	'001'B	'0'B	'1111'B	
SABM_11	'01'O	'001'B	'1'B	'1111'B	
SABM_12	'01'O	'001'B	?	'1111'B	
SABM_30	'03'O	'001'B	'0'B	'1111'B	
SABM_31	'03'O	'001'B	'1'B	'1111'B	
SABM_40	'04'O	'001'B	'0'B	'1111'B	Invalid address
SABM_41	'04'O	'001'B	'1'B	'1111'B	Invalid address

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **UA**					
	FIELD NAME				
CONSTRAINT NAME	A	UA_H	F	UA_L	COMMENTS
UA_10	'01'O	'011'B	'0'B	'0011'B	
UA_11	'01'O	'011'B	'1'B	'0011'B	
UA_1(F:Bitstring)	'01'O	'011'B	F	'0011'B	
UA_30	'03'O	'011'B	'0'B	'0011'B	
UA_31	'03'O	'011'B	'1'B	'0011'B	

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **DM**					
	FIELD NAME				
CONSTRAINT NAME	A	DM_H	F	DM_L	COMMENTS
DM_10	'01'O	'000'B	'0'B	'1111'B	
DM_11	'01'O	'000'B	'1'B	'1111'B	
DM_1(F:Bitstring)	'01'O	'000'B	F	'1111'B	
DM_30	'03'O	'000'B	'0'B	'1111'B	
DM_31	'03'O	'000'B	'1'B	'1111'B	

PDU CONSTRAINTS DECLARATIONS						
PDU NAME: **FRMR**						
	FIELD NAME					
CONSTRAINT NAME	A	FRMR_H	F	FRMR_L	FRMR_I	COMMENTS
FRMR_10	'01'O	'100'B	'0'B	'0111'B	FI_10	
FRMR_11	'01'O	'100'B	'1'B	'0111'B	FI_11	
FRMR_30	'03'O	'100'B	'0'B	'0111'B	FI_30	
FRMR_31	'03'O	'100'B	'1'B	'0111'B	FI_31	
FRMR_32	'03'O	'100'B	?	'0111'B	FI_32	
FRMR_33 # (S,R,Z:Bitstring)	'03'O	'100'B	'0'B	'0111'B	FI_33(S,R,Z)	
FRMR_34 # (S,R,Z:Bitstring)	'03'O	'100'B	'1'B	'0111'B	FI_34(S,R,Z)	

PDU FIELD GROUP CONSTRAINTS DECLARATIONS								
FIELD GROUP NAME: FRMR_I								
	FIELD NAME							
CONSTRAINT NAME	RCF	BIT9	VS	CR	VR	ZYXW	BIT21_24	COMMENTS
FI_10	'FF'O	'0'B	?	'1'B	?	'0001'B	'0000'B	
FI_11	'FF'O	'0'B	?	'0'B	?	'0001'B	'0000'B	
FI_30	'FF'O	'0'B	?	?	?	?	'0000'B	
FI_31	'FF'O	'0'B	?	?	?	?	'0000'B	
FI_32	'FF'O	'0'B	?	?	?	?	'0000'B	
FI_33(S,R,Z:Bitstring)	'E0'O	'0'B	S	'0'B	R	Z	'0000'B	
FI_34(S,R,Z:Bitstring)	'E0'O	'0'B	S	'0'B	R	Z	'0000'B	

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **RR**					
	FIELD NAME				
CONSTRAINT NAME	A	NR	PF	RR_CF	COMMENTS
RR_10	'01'O	?	'0'B	'0001'B	Command
RR_11	'01'O	?	'1'B	'0001'B	Command
RR_1(F:Bitstring)	'01'O	?	F	'0001'B	Response
RR_12	'01'O	?	'0'B	'0001'B	Response
RR_13	'01'O	?	'1'B	'0001'B	Response
RR_14	'01'O	?	?	'0001'B	
RR_30	'03'O	?	'0'B	'0001'B	Command
RR_31	'03'O	?	'1'B	'0001'B	Command
RR_32	'03'O	?	'0'B	'0001'B	Response
RR_33	'03'O	?	'1'B	'0001'B	Response
RR_41	'04'O	?	'1'B	'0001'B	Invalid address

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **RNR**					
	FIELD NAME				
CONSTRAINT NAME	A	NR	PF	RNR_CF	COMMENTS
RNR_10	'01'O	?	'0'B	'0101'B	Command
RNR_11	'01'O	?	'1'B	'0101'B	Command
RNR_12	'01'O	?	'0'B	'0101'B	Response
RNR_13	'01'O	?	'1'B	'0101'B	Response
RNR_14	'01'O	?	?	'0101'B	
RNR_30	'03'O	?	'0'B	'0101'B	Command
RNR_31	'03'O	?	'1'B	'0101'B	Command
RNR_32	'03'O	?	'0'B	'0101'B	Response
RNR_33	'03'O	?	'1'B	'0101'B	Response

PDU CONSTRAINTS DECLARATIONS					
PDU NAME: **REJ**					
	FIELD NAME				
CONSTRAINT NAME	A	NR	PF	REJ_CF	COMMENTS
REJ_10	'01'O	?	'0'B	'1001'B	Command
REJ_11	'01'O	?	'1'B	'1001'B	Command
REJ_12	'01'O	?	'0'B	'1001'B	Response
REJ_13	'01'O	?	'1'B	'1001'B	Response
REJ_30	'03'O	?	'0'B	'1001'B	Command
REJ_31	'03'O	?	'1'B	'1001'B	Command
REJ_32	'03'O	?	'0'B	'1001'B	Response
REJ_33	'03'O	?	'1'B	'1001'B	Response

PDU CONSTRAINTS DECLARATIONS							
PDU NAME: **I**							
	FIELD NAME						
CONSTRAINT NAME	A	NR	P	NS	I_L	UD	COMMENTS
I_10	'01'O	?	'0'B	?	'0'B	?	
I_11	'01'O	?	'1'B	?	'0'B	?	
I_12	'01'O	?	?	?	'0'B	?	
I_30	'03'O	?	'0'B	?	'0'B	UDAT	
I_31	'03'O	?	'1'B	?	'0'B	UDAT	
I_32	'03'O	?	'0'B	?	'0'B	-	No info. field
I_33	'03'O	?	?	?	'0'B	UDAT	
I_4(P:Bitstring)	'04'O	?	P	?	'0'B	UDAT	Invalid address

Note: '?' indicates "don't care" values.

If the symbol '?' is used in a constraint called by a SEND event, then the fields/parameters in which it occurs shall be explicitly overwritten with definite values before the event is to be sent (this will be done in the dynamic behaviour tables).

PDU CONSTRAINTS DECLARATIONS							
PDU NAME: **LONG**							
	FIELD NAME						
CONSTRAINT NAME	A	NR	P	NS	LONG_L	UD	COMMENTS
LONG_30 # #	'03'O	?	'0'B	?	'0'B	ULON	Info. field length = MEL+8 bits.
LONG_31 # #	'03'O	?	'1'B	?	'0'B	ULON	Info. field length = MEL+8 bits.

PDU CONSTRAINTS DECLARATIONS						
PDU NAME: **RR_L**						
	FIELD NAME					
CONSTRAINT NAME	A	NR	PF	RR_CF	INFO	COMMENTS
RR_L_10 #	'01'O	?	'0'B	'0001'B	'00'H	INFO may be set to other values.
RR_L_31 #	'03'O	?	'1'B	'0001'B	'00'H	INFO may be set to other values.

PDU CONSTRAINTS DECLARATIONS						
PDU NAME: **RNR_L**						
	FIELD NAME					
CONSTRAINT NAME	A	NR	PF	RNR_CF	INFO	COMMENTS
RNR_L_10	'01'O	?	'0'B	'0101'B	'00'H	INFO may be set to other values.
#						
RNR_L_31	'03'O	?	'1'B	'0101'B	'00'H	INFO may be set to other values.
#						

PDU CONSTRAINTS DECLARATIONS						
PDU NAME: **REJ_L**						
	FIELD NAME					
CONSTRAINT NAME	A	NR	PF	REJ_CF	INFO	COMMENTS
REJ_L_10	'01'O	?	'0'B	'1001'B	'00'H	INFO may be set to other values.
#						
REJ_L_31	'03'O	?	'1'B	'1001'B	'00'H	INFO may be set to other values.
#						

PDU CONSTRAINTS DECLARATIONS		
PDU NAME: **HEX**		
	FIELD NAME	
CONSTRAINT NAME	String	COMMENTS
HEX_1	?	

PDU CONSTRAINTS DECLARATIONS		
PDU NAME: **ABORT**		
	FIELD NAME	
CONSTRAINT NAME	String	COMMENTS
ABORT_1	?	

PDU CONSTRAINTS DECLARATIONS		
PDU NAME: **FCS_ERROR**		
	FIELD NAME	
CONSTRAINT NAME	String	COMMENTS
FCS_ERR_1	?	

5.4 Common test step library

The sub-trees defined in this subclause are part of the common library of test steps.

5.4.1 Preambles

The purpose of the preambles is to bring the IUT to the initial test state, starting from any previous state of the IUT.

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/DL1_STATE			
IDENTIFIER:	**DL1_STATE**			
OBJECTIVE:	An initialization sequence such as this is executed before each test case in test group DL1, its purpose is to have the IUT in the Disconnected Phase at the beginning of a test case.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!DISC		DISC_31		(1)
Start TMO1				
?UA	ST1	UA_31		(1)
?DM		DM_31		(1)
?DISC		DISC_11		DISC collision
!UA		UA_11		
-> ST1				
?SABM		SABM_11		SABM collision
!DM		DM_11		
-> ST1				
?DISC [IUT_TYPE="X25_1980"]		DISC_10		DISC collision
!UA		UA_10		
-> ST1				
?SABM [IUT_TYPE="X25_1980"]		SABM_10		SABM collision
!DM		DM_10		
-> ST1				
?Otherwise				
-> ST1				
?Timeout TMO1			INCONC	
EXTENDED COMMENTS:				
	Tester Sends		IUT Sends	
(1)	DISC/P=1	---------->		
		<----------	UA/F=1 or DM/F=1	

TEST STEP DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/CommonLib/Preamble/DL2_STATE
IDENTIFIER:	**DL2_STATE**
OBJECTIVE:	An initialization sequence such as the one shown below is executed before each test in test group DL2. The purpose is to disconnect the link and then expect a IUT initiated DISC frame. The IUT may have any suitable means to transmit the DISC, in order to complete this preamble.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
[(DMRSP=TRUE) OR (UNRSP=TRUE)]				If operator action is required.
#				
+DL2_DM_IUT				
?DISC [IUT_TYPE="X25_1980"]		DISC_10		(1)
!DM		DM_10		
!SABM		SABM_31		
?UA		UA_31		
+RECV_DISC				
?Otherwise			INCONC	
?DISC		DISC_11		(1)
!DM		DM_11		
!SABM		SABM_31		
?UA		UA_31		
+RECV_DISC				
?Otherwise			INCONC	
?SABM [IUT_TYPE="X25_1980"]		SABM_10		(2)
!UA		UA_10		
+RECV_DISC				
?SABM		SABM_11		(2)
!UA		UA_11		
+RECV_DISC				
+DL1_STATE				
Start TMO1				
?DISC (P_F_BIT:='1'B)		DISC_11		(3)
+HANDLE_IUT_DISC				
?DISC [IUT_TYPE="X25_1980"]		DISC_10		(3)
(P_F_BIT:='0'B)				
+HANDLE_IUT_DISC				
?Timeout TMO1				delayed by Td
!SABM		SABM_31		(4),(5)
Start TMO1				
?UA		UA_31		(4)
+RECV_DISC				
?SABM (P_F_BIT:='1'B)		SABM_11		(5)
!UA		UA_11		
?UA		UA_31		
+RECV_DISC				
?Otherwise			INCONC	

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BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B) !UA ?UA +RECV_DISC ?Otherwise ?Otherwise ?Timeout TMO1 ?Otherwise		SABM_10 UA_10 UA_31	 INCONC INCONC INCONC INCONC	(5)

EXTENDED COMMENTS:

	Tester Sends		IUT Sends	
(1)		<----------	DISC(*)	
	DM(*)	---------->		
	SABM/P=1	---------->		
		<----------	UA/F=1	
		<----------	DISC(*)	] Receive DISC
(2)		<----------	SABM(*)	
	UA(*)	---------->		
		<----------	DISC(*)	] Receive DISC
(3) Initialized by DL1		<----------	DISC(*)	
	DM(*)	---------->		]
		<----------	SABM(*)	] Handle DISC
	UA(*)	---------->		] sent by IUT.
		<----------	DISC(*)	]
(4) Initialized by DL1	SABM/P=1	---------->		
		<----------	UA/F=1	
		<----------	DISC(*)	] Receive DISC

(5) This is a SABM Collision situation,

Initialized by DL1	SABM/P=1	---------->		
		<----------	SABM(*)	
	UA(*)	---------->		
		<----------	UA/F=1	
		<----------	DISC(*)	] Receive DISC

Within the indicated sequences the term "(*)" associated with mode setting commands and responses indicates the state of the P/F bits for the ISO 7776, X.25-1984 and X.25-1980 cases. For ISO 7776 and X.25-1984, the P bit shall always be "1". For X.25-1980, the P bit may be "0" or "1".

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/Preamble/DL2_DM_IUT				
IDENTIFIER:	**DL2_DM_IUT**				
OBJECTIVE:	This sub-tree is used in DL2_STATE for IUTs that require operator action after entering the disconnected phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
<IUT! SABM> Start TOPR ?SABM !UA +RECV_DISC ?SABM [IUT_TYPE="X25_1980"] !UA +RECV_DISC ?Otherwise -> DDI2 ?Timeout TOPR		DDI2	SABM_11 SABM_11 UA_11 SABM_10 UA_10	INCONC	(1),(2)
EXTENDED COMMENTS: (1) Operator takes necessary action to clear previous state and initialize link. (2) In the case of the IUT of type X.25-1980 it is also allowed for the operator to initiate a SABM with the P bit equal to zero instead.					

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/Preamble/HANDLE_IUT_DISC				
IDENTIFIER:	**HANDLE_IUT_DISC**				
OBJECTIVE:	Some IUTs transmit a DISC before a Link Set-up. This sub-tree will handle those situations.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!DM # ?SABM [IUT_TYPE ="X25_1980"] !UA +RECV_DISC ?SABM !UA +RECV_DISC ?Otherwise			DM_1(P_F_BIT) SABM_10 UA_10 SABM_11 UA_11	INCONC	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/RECV_DISC			
IDENTIFIER:	**RECV_DISC**			
OBJECTIVE:	This sub-tree handles situations where a DISC is received from IUT by request.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
<IUT! DISC> Start TOPR ?DISC (P_F_BIT:='1'B) ?DISC [IUT_TYPE="X25=1980"] # (P_F_BIT:='0'B) +NORMAL_INFORMATION_TRANSFER -> RD ?Otherwise ?Timeout TOPR	 RD 	DISC_11 DISC_11 DISC_10 	 INCONC INCONC	(1)
EXTENDED COMMENTS: (1) In the case of the IUT of type X.25-1980 it is also allowed for the operator to initiate a DISC with the P bit equal to zero instead.				

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/Preamble/DL3_STATE				
IDENTIFIER:	**DL3_STATE**				
OBJECTIVE:	An initialization sequence such as the one below is executed before each test in test group DL3. The purpose is to cause the IUT to send a SABM frame.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
[(DMRSP=TRUE) OR (UNRSP=TRUE)] # +DL3_DM_IUT					If operator action is required.
?DISC [IUT_TYPE="X25_1980"] !DM +TESTER_RESETS_LINK			DISC_10 DM_10		(1),(2)
?DISC !DM +TESTER_RESETS_LINK			DISC_11 DM_11		(1),(2)
+DL1_STATE Start TMO1					
?SABM (P_F_BIT:='1'B)			SABM_11		(3)
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)			SABM_10		(3)
?DISC !DM +REQ_INIT			DISC_11 DM_11		(4)
?DISC [IUT_TYPE="X25_1980"] !DM +REQ_INIT			DISC_10 DM_10		(4)
?Timeout TMO1					delayed by Td
!SABM ?UA !DM			SABM_31 UA_31 DM_10		(5),(6)
?DISC (P_F_BIT:='1'B) +RESP_TO_DISC		ST3	DISC_11		(5)
?DISC [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B) +RESP_TO_DISC			DISC_10		(5)
?SABM (P_F_BIT:='1'B)			SABM_11		(6)
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B) +NORMAL_INFORMATION_ # TRANSFER -> ST3			SABM_10		(6)
?Otherwise				INCONC	

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BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
TESTER_RESETS_LINK				
!SABM		SABM_31		
?UA		UA_31		
!DM		DM_10		
?DISC [IUT_TYPE="X25_1980"]	ST31	DISC_10		(1)
!UA		UA_10		
+REQ_INIT				
?DISC		DISC_11		(1)
!UA		UA_11		
+REQ_INIT				
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)		SABM_10		(2)
?SABM (P_F_BIT:='1'B)		SABM_11		(2)
+NORMAL_INFORMATION_ TRANSFER				
-> ST31				
?Otherwise			INCONC	
?Otherwise			INCONC	

EXTENDED COMMENTS:

	Tester Sends		IUT Sends	
(1)		<----------	DISC(*)	
	DM(*)	---------->		]
	SABM/P=1	---------->		] Tester resets
		<----------	UA/F=1	] the link
	DM	---------->		]
		<----------	DISC(*)	]
	UA(*)	---------->		]
	DM	---------->		]
		<----------	SABM(*)	]
(2)		<----------	DISC(*)	
	DM(*)	---------->		]
	SABM/P=1	---------->		] Tester resets
		<----------	UA/F=1	] the link
	DM	---------->		]
		<----------	SABM(*)	]
(3) Initialized by DL1		<----------	SABM(*)	
(4) Initialized by DL1		<----------	DISC(*)	
	DM(*)	---------->		]
	DM	---------->		] Request init.
		<----------	SABM(*)	]

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(5) Initialized by DL1	SABM/P=1	---------->			
			<----------	UA/F=1	
	DM	---------->			
			<----------	DISC(*)	
	DM(*)	---------->			] Response to
			<----------	SABM(*)	] DISC
(6) Initialized by DL1	SABM/P=1	---------->			
			<----------	UA/F=1	
	DM	---------->			
			<----------	SABM(*)	

Within the indicated sequences the term "(*)" associated with mode setting commands and responses indicates the state of the P/F bits for the ISO 7776, X.25-1984 and X.25-1980 cases. For ISO 7776 and X.25-1984, the P bit shall always be "1". For X.25-1980, the P bit may be "0" or "1".

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/CommonLib/Preamble/DL3_DM_IUT IDENTIFIER: **DL3_DM_IUT** OBJECTIVE: This sub-tree is used in DL3_STATE for IUTs that require operator action after entering the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Start TMO1 ?SABM [IUT_TYPE="X25_1980"]	DDI3	SABM_10		(1)
!UA		UA_10		
!DM		DM_10		(1)
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)	DDI32	SABM_10		
?SABM (P_F_BIT:='1'B) +NORMAL_INFORMATION_ TRANSFER		SABM_11		
# -> DDI32				
?Otherwise			INCONC	
?SABM		SABM_11		
!UA		UA_11		
!DM		DM_10		(1)
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)	DDI33	SABM_10		
?SABM (P_F_BIT:='1'B) +NORMAL_INFORMATION_ TRANSFER		SABM_11		
# -> DDI33				
?Otherwise			INCONC	
?Otherwise				
-> DDI3				
?Timeout TMO1		SABM_31		
!SABM				
Start TMO1		UA_31		
?UA		DM_10		
!DM		SABM_10		
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)	DDI34			
?SABM (P_F_BIT:='1'B) +NORMAL_INFORMATION_ TRANSFER		SABM_11		
# -> DDI34				
?Otherwise			INCONC	
?Timeout TMO1		SABM_11		(3)
<IUT! SABM>				
Start TOPR		SABM_11		
?SABM (P_F_BIT:='1'B)	DDI31	SABM_10		
?SABM [IUT_TYPE= "X25_1980"] (P_F_BIT:='0'B)				
# ?Otherwise -> DDI31				
?Timeout TOPR			INCONC	

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EXTENDED COMMENTS:

(1) IUT may already be in the link set-up phase. However, to ensure that the retransmission limit is not reached inadvertently during a test case, the IUT is brought into the information transfer phase and then a link resetting procedure is initiated.

(2) Operator takes necessary action to clear previous state and initialize link.

(3) In the case of the IUT of type X.25-1980 it is also allowed for the operator to initiate a SABM with the P bit equal to zero instead.

TEST STEP DYNAMIC BEHAVIOUR

REFERENCE: LAPB/CommonLib/Preamble/RESP_TO_DISC
IDENTIFIER: **RESP_TO_DISC**
OBJECTIVE: Some IUTs transmit a DISC before a Link Set-up. This sub-tree will handle those situations.
DEFAULTS REFERENCE:

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!DM		DM_1		
#		(P_F_BIT)		
Start TMO1				
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)		SABM_10		
?SABM (P_F_BIT:='1'B)		SABM_11		
?Otherwise			INCONC	
?Timeout TMO1			INCONC	

TEST STEP DYNAMIC BEHAVIOUR

REFERENCE: LAPB/CommonLib/Preamble/REQ_INIT
IDENTIFIER: **REQ_INIT**
OBJECTIVE: Request Link Set-up from the IUT.
DEFAULTS REFERENCE:

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!DM		DM_10		
Start TMO1				
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B)		SABM_10		
?SABM (P_F_BIT:='1'B)		SABM_11		
?Otherwise			INCONC	
?Timeout TMO1			INCONC	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/DL4_STATE			
IDENTIFIER:	**DL4_STATE**			
OBJECTIVE:	A sequence such as the one below is executed before each test case in test group DL4. The purpose is to get the IUT into the information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
[(DMRSP=TRUE) OR (UNRSP=TRUE)] # +DL4_DM_IUT				If operator action is required.
?DISC [IUT_TYPE="X25_1980"] !DM +TESTER_SENDS_SABM		DISC_10 DM_10		(1)
?DISC !DM +TESTER_SENDS_SABM		DISC_11 DM_11		(1)
?SABM [IUT_TYPE="X25_1980"] !UA (P_F_BIT:='0'B)		SABM_10 UA_10		(2)
?SABM !UA (P_F_BIT:='1'B)		SABM_11 UA_11		(2)
+DL1_STATE Start TMO1				
?SABM (P_F_BIT:='1'B) !UA (V_S:=0,V_R:=0)		SABM_11 UA_11		(3)
?SABM [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B) !UA (V_S:=0,V_R:=0)		SABM_10 UA_10		(3)
?DISC (P_F_BIT:='1'B) !DM		DISC_11 DM_11		(4)
?SABM [IUT_TYPE="X25_1980"] !UA (P_F_BIT:='0'B,V_S:=0,V_R:=0)		SABM_10 UA_10		
?SABM !UA (P_F_BIT:='1'B,V_S:=0,V_R:=0)		SABM_11 UA_11		
?Otherwise			INCONC	
?DISC [IUT_TYPE="X25_1980"] (P_F_BIT:='0'B) !DM		DISC_10 DM_10		(4)
?SABM !UA (P_F_BIT:='0'B,V_S:=0, # V_R:=0)		SABM_10 UA_10		
?SABM !UA (P_F_BIT:='0'B,V_S:=0, # V_R:=0)		SABM_11 UA_11		
?Otherwise			INCONC	
?Timeout TMO1				delayed by Td

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BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!SABM (P_F_BIT:='1'B) Start TMO1 ?UA (V_S:=0,V_R:=0) ?Otherwise ?Timeout TMO1		SABM_31 UA_31	 INCONC INCONC	(5)
TESTER_SENDS_SABM !SABM ?UA (P_F_BIT:='1'B) ?Otherwise		 SABM_31 UA_31	 INCONC	

EXTENDED COMMENTS:

	Tester Sends		IUT Sends	
(1)		<----------	DISC(*)	
	DM(*)	---------->		
	SABM/P=1	---------->		] Tester sends
		<----------	UA/F=1	] SABM
(2)		<----------	SABM(*)	
	UA(*)	---------->		
(3) Initialized by DL1		<----------	SABM(*)	
	UA(*)	---------->		
(4) Initialized by DL1		<----------	DISC(*)	
	DM(*)	---------->		
		<----------	SABM(*)	
	UA(*)	---------->		
(5) Initialized by DL1	SABM/P=1	---------->		
		<----------	UA/F=1	

Within the indicated sequences the term "(*)" associated with mode setting commands and responses indicates the state of the P/F bits for the ISO 7776, X.25-1984 and X.25-1980 cases. For ISO 7776 and X.25-1984, the P bit shall always be "1". For X.25-1980, the P bit may be "0" or "1".

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/DL4_DM_IUT			
IDENTIFIER:	**DL4_DM_IUT**			
OBJECTIVE:	This sub-tree is used in DL4_STATE for IUTs that require operator action after entering the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!SABM		SABM_31		
Start TMO1				
?UA (P_F_BIT:='1'B)	DDI4	UA_31		
?SABM [IUT_TYPE="X25_1980"]		SABM_10		
!UA (P_F_BIT:='0'B)		UA_10		
-> DDI4				
?SABM		SABM_11		
!UA		UA_11		
-> DDI4				
?Otherwise			INCONC	
?Timeout TMO1				
<IUT! SABM>		SABM_11		(1),(2)
Start TOPR				
?SABM	DDI41	SABM_11		
!UA (P_F_BIT:='1'B)		UA_11		
?SABM [IUT_TYPE="X25_1980"]		SABM_10		
!UA (P_F_BIT:='0'B)		UA_10		
?Otherwise				
-> DDI41				
?Timeout TOPR			INCONC	
EXTENDED COMMENTS:				
(1) Operator takes necessary action to clear previous state and initialize link.				
(2) In the case of the IUT of type X.25-1980 it is also allowed for the operator to initiate a SABM with the P bit equal to zero instead.				

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/DL5_STATE			
IDENTIFIER:	**DL5_STATE**			
OBJECTIVE:	A sequence such as the one below is executed before each test case in test group DL5. The purpose is to get the IUT into the frame reject condition.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE Start TMO1 !I (I.NS:=V_S,I.NR:=(V_R+7) MOD Md)		I_30		(1),(2)
?FRMR [FRMR.ZYXW='1000'B] # [FRMR.CR='0'B] # (IR:=FRMR.VR, IS:=FRMR.VS, # Z_W:=FRMR.ZYXW)	ST5	FRMR_30		(2)
?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='0'B] # [IUT_TYPE="ISO_7776"] # (IR:=FRMR.VR, IS:=FRMR.VS, # Z_W:=FRMR.ZYXW)		FRMR_30		(2)
+NORMAL_INFORMATION_ # TRANSFER #				Allow for other valid behaviour in DL4.
-> ST5				
?Otherwise			INCONC	
?Timeout TMO1			INCONC	

EXTENDED COMMENTS:

(1) I frame control field contains invalid N(R). The test cases in DL5 require the tester stimulus to be an I frame with control field containing invalid N(R).

(2) Initialized by DL4

Tester Sends		IUT Sends
I (invalid N(R))	---------->	
	<----------	FRMR

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Preamble/DL6_STATE			
IDENTIFIER:	**DL6_STATE**			
OBJECTIVE:	A sequence such as the one below is executed before each test case in test group DL6. The purpose is to get the IUT into the busy condition. This preamble requires an IUT initiated action.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=V_S,I.NR:=V_R) (V_S:=(V_S+1) MOD Md) Start TMO1		I_30		(1),(2)
?RNR[(RNR.NR=V_S) OR # (RNR.NR=(V_S-1) MOD Md)] !RR(RR.NR:=V_R)	ST6	RNR_11 RR_13		(1),(3)
?RNR [RNR.NR=V_S]		RNR_32		(2),(3)
?I [I.NR=(V_S-1) MOD Md][I.NS=V_R] !RR (RR.NR:=V_R) -> ST6		I_11 RR_13		
?I [I.NR=(V_S-1) MOD Md][I.NS=V_R] -> ST6		I_10		
?Otherwise			INCONC	
?Timeout TMO1			INCONC	

EXTENDED COMMENTS:

	Tester Sends		IUT Sends
(1) Initialized by DL4	I (N(R)=V(S))	---------->	
		<----------	RNR (N(R)=V(S)) - Command
	RR (N(R)= V(R)) - Response	---------->	
(2) Initialized by DL4	I (N(R)=V(S))	---------->	
		<----------	RNR (N(R)=V(S)) - Response

(3) As a result of the busy condition an RNR frame is sent.

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/Preamble/DL7_STATE				
IDENTIFIER:	**DL7_STATE**				
OBJECTIVE:	A sequence such as the one below is executed before each test case in test group DL7. The purpose is to get the IUT into the sent reject condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=V_S+1,I.NR:=V_R) Start TMO1			I_30		(1),(2),(3),(4)
?REJ [REJ.NR=V_S]		ST7	REJ_32		(1)
?REJ [REJ.NR=V_S]			REJ_10		(2)
?REJ [REJ.NR=V_S] !RR (RR.NR:=V_R)			REJ_11 RR_13		(3)
?I [I.NR=V_S MOD Md][I.NS=V_R] !RR (RR.NR:=V_R) -> ST7			I_11 RR_13		
?I [I.NR=V_S MOD Md][I.NS=V_R] -> ST7			I_10		
?Otherwise				INCONC	
?Timeout TMO1				INCONC	

EXTENDED COMMENTS:

	Tester Sends		IUT Sends
(1) Initialized by DL4	I (N(R)=V(R))	---------->	
		<----------	REJ (N(R)=V(S)) - Response
(2) Initialized by DL4	I (N(R)=V(R))	---------->	
		<----------	REJ (N(R)=V(S)) - Command
(3) Initialized by DL4	I (N(R)=V(R))	---------->	
		<----------	REJ (N(R)=V(S)) - Command
	RR (N(R)= V(R)) - Response	---------->	

(4) An out of sequence I frame is sent.

5.4.2 Verification sequences

This clause contains test steps for the verification sequences. These test steps may also be used to verify that IUT is in the expected state. These sub-trees can be used within any test group.

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Verification/DL1_CHK			
IDENTIFIER:	**DL1_CHK**			
OBJECTIVE:	To verify that the IUT is in the disconnected phase. This verification sequence applies only if the IUT has a stable disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!RR (RR.NR:=0) Start TMO1 ?DM +OTHER_RESPONSE ?Timeout TMO1		RR_31 DM_31	 FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Verification/DL2_CHK			
IDENTIFIER:	**DL2_CHK**			
OBJECTIVE:	To verify that IUT is in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Start T1 ?DISC ?DISC [IUT_TYPE="X25_1980"] +OTHER_RESPONSE ?Timeout T1		 DISC_11 DISC_10	 FAIL	 retransmission of DISC

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Verification/DL3_CHK			
IDENTIFIER:	**DL3_CHK**			
OBJECTIVE:	To verify that IUT is in the link set-up phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Start T1 ?SABM ?SABM [IUT_TYPE="X25_1980"] +OTHER_RESPONSE ?Timeout T1		 SABM_11 SABM_10	 FAIL	 retransmission of SABM

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Verification/DL4_CHK1			
IDENTIFIER:	**DL4_CHK1**			
OBJECTIVE:	To verify that IUT is in the normal information transfer phase by sending an RNR frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!RNR (RNR.NR:=V_R) Start TMO1 ?RR ?RNR ?RR -> CH41 ?RNR -> CH41 +OTHER_RESPONSE ?Timeout TMO1	 CH41	RNR_31 RR_33 RNR_33 RR_14 RNR_14	 FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/Verification/DL4_CHK2			
IDENTIFIER:	**DL4_CHK2**			
OBJECTIVE:	To verify that IUT is in the normal information transfer phase by sending an I-frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!I (I.NS:=V_S, I.NR:=V_R) (V_S:=V_S+1) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +NORMAL_INFORMATION_ TRANSFER -> CH42 +OTHER_RESPONSE ?Timeout TMO1	 CH42	I_31 RR_33 RNR_33	 PASS PASS FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/CommonLib/Verification/DL5_CHK IDENTIFIER: **DL5_CHK** OBJECTIVE: To verify that IUT is in the frame reject condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
[FRITa = "YES"] !RNR (RNR.NR:=V_R) Start TMO1 ?FRMR +OTHER_RESPONSE ?Timeout TMO1 [FRITb = "YES"] Start T1 ?FRMR +OTHER_RESPONSE ?Timeout T1 [(FRITa = "NO") AND (FRITb = "NO")]		RNR_31 FRMR_31 FRMR_30	 PASS FAIL PASS FAIL INCONC	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/CommonLib/Verification/DL6_CHK IDENTIFIER: **DL6_CHK** OBJECTIVE: To verify that IUT is in the busy condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!RNR (RNR.NR:=V_R) Start TMO1 ?RNR +OTHER_RESPONSE ?Timeout TMO1		RNR_31 RNR_33	 FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/CommonLib/Verification/DL7_CHK IDENTIFIER: **DL7_CHK** OBJECTIVE: To verify that IUT is in the sent reject condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!RR (RR.NR:=V_R) Start TMO1 ?RR ?REJ +OTHER_RESPONSE ?Timeout TMO1		RR_31 RR_33 REJ_33	 FAIL	

5.4.3 Other common library sub-trees

These are common library sub-trees that are used in this test suite.

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/NORMAL_INFORMATION_TRANSFER			
IDENTIFIER:	**NORMAL_INFORMATION_TRANSFER**			
OBJECTIVE:	In the information transfer phase an IUT may send valid I, RR, and RNR frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict. This sub-tree may be used as a default behaviour to accomplish this purpose.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) !RR (RR.NR:=V_R)		I_11 RR_13		
?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) !RR (RR.NR:=V_R)		I_10 RR_12		
?RR !RR (RR.NR:=V_R)		RR_11 RR_13		
?RNR !RR (RR.NR:=V_R)		RNR_11 RR_13		IUT went busy
(FLAG:=FALSE) Start TBSY Repeat RECV_CHK(FLAG) Until # [FLAG=TRUE] Cancel TBSY				
?RNR (FLAG:=FALSE) Start TBSY Repeat RECV_CHK(FLAG) Until # [FLAG=TRUE] Cancel TBSY		RNR_32		
?RNR (FLAG:=FALSE) Start TBSY Repeat RECV_CHK(FLAG) Until # [FLAG=TRUE] Cancel TBSY		RNR_10		
?RR ?REJ (V_S:=REJ.NR) ?RR ?REJ (V_S:=REJ.NR) ?REJ (V_S:=REJ.NR) !RR (RR.NR:=V_R)		RR_10 REJ_10 RR_32 REJ_32 REJ_11 RR_13		

TEST STEP DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/CommonLib/NORMAL_INFORMATION_TRANSFER_2
IDENTIFIER:	**NORMAL_INFORMATION_TRANSFER_2**
OBJECTIVE:	In the information transfer phase an IUT may send valid I, RR, and RNR frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict. This sub-tree may be used as a default behaviour to accomplish this purpose for some specific cases where NORMAL_INFORMATION_TRANSFER test step is not as suitable.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][(I.NR=V_S) OR		I_11		
# (I.NR=(V_S-1) MOD Md) OR				
# (I.NR=(V_S-2) MOD Md)]				
(V_R:=(V_R+1) MOD Md)				
!RR (RR.NR:=V_R)		RR_13		
?I [I.NS=V_R][(I.NR=V_S) OR		I_10		
# (I.NR=(V_S-1) MOD Md) .OR				
# (I.NR=(V_S-2) MOD Md)]				
(V_R:=(V_R+1) MOD Md)				
!RR (RR.NR:=V_R)		RR_12		
?RR		RR_11		
!RR (RR.NR:=V_R)		RR_13		
?RNR		RNR_11		
!RR (RR.NR:=V_R)		RR_13		IUT went busy
(FLAG:=FALSE) Start TBSY				
Repeat RECV_CHK(FLAG) Until				
# [FLAG=TRUE]				
Cancel TBSY				
?RNR		RNR_32		
(FLAG:=FALSE) Start TBSY				
Repeat RECV_CHK(FLAG) Until				
# [FLAG=TRUE]				
Cancel TBSY				
?RNR		RNR_10		
(FLAG:=FALSE) Start TBSY				
Repeat RECV_CHK(FLAG) Until				
# [FLAG=TRUE]				
Cancel TBSY				
?RR		RR_10		
?REJ (V_S:=REJ.NR)		REJ_10		
?RR		RR_32		
?REJ (V_S:=REJ.NR)		REJ_32		
?REJ (V_S:=REJ.NR)		REJ_11		
!RR (RR.NR:=V_R)		RR_13		

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/ACCEPTABLE_UNEXPECTED_DL4				
IDENTIFIER:	**ACCEPTABLE_UNEXPECTED_DL4**				
OBJECTIVE:	In the information transfer phase an IUT may send valid I, RR,REJ or RNR frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?RR ?RNR ?REJ ?RR ?RNR ?REJ ?RR ?RNR ?REJ			I_11 I_10 RR_11 RNR_11 REJ_11 RR_10 RNR_10 REJ_10 RR_32 RNR_32 REJ_32		

TEST STEP DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/CommonLib/ACCEPTABLE_UNEXPECTED_DL6				
IDENTIFIER:	**ACCEPTABLE_UNEXPECTED_DL6**				
OBJECTIVE:	In the IUT busy condition the IUT may send valid I or RNR frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][I.NR=V_S] (V_R:=(V_R+1) MOD Md) ?I [I.NS=V_R][I.NR=V_S] (V_R:=(V_R+1) MOD Md) ?RNR !RR (RR.NR:=V_R) ?RNR ?RNR			I_11 I_10 RNR_11 RR_13 RNR_32 RNR_10		

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/ACCEPTABLE_UNEXPECTED_DL7			
IDENTIFIER:	**ACCEPTABLE_UNEXPECTED_DL7**			
OBJECTIVE:	In the sent reject condition the IUT may send valid I, RR, or REJ frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?RR !RR (RR.NR:=V_R) ?REJ !RR (RR.NR:=V_R) ?RR ?REJ ?RR ?REJ		I_11 I_10 RR_11 RR_13 REJ_11 RR_13 RR_10 REJ_10 RR_32 REJ_32		

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/ACCEPTABLE_UNEXPECTED_DL8			
IDENTIFIER:	**ACCEPTABLE_UNEXPECTED_DL8**			
OBJECTIVE:	In the sent reject timer recovery condition the IUT may send valid I or RR frames. The purpose of this sub-tree is to allow such behaviour without affecting the final test verdict.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?I [I.NS=V_R][(I.NR=V_S) OR # (I.NR=(V_S-1) MOD Md)] (V_R:=(V_R+1) MOD Md) ?RR !RR (RR.NR:=V_R) ?RR ?RR		I_11 I_10 RR_11 RR_13 RR_10 RR_32		

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/RECV_CHK			
IDENTIFIER:	**RECV_CHK** (FLAG:BOOLEAN)			
OBJECTIVE:	To wait for time TBSY when IUT is busy in DL4 state.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?RR (V_S:=RR.NR,FLAG:=TRUE) !RR (RR.NR:=V_R) ?RNR (V_S:=RNR.NR) !RR (RR.NR:=V_R) ?REJ (V_S:=REJ.NR,FLAG:=TRUE) !RR (RR.NR:=V_R) ?RR (V_S:=RR.NR,FLAG:=TRUE) ?RNR (V_S:=RNR.NR) ?REJ (V_S:=REJ.NR,FLAG:=TRUE) ?RR (V_S:=RR.NR,FLAG:=TRUE) ?RNR (V_S:=RNR.NR) ?REJ (V_S:=REJ.NR,FLAG:=TRUE) ?I(P_F_BIT:=I.P,V_R:=(V_R+1)MOD Md, # V_S:=I.NR) !RR (RR.NR:=V_R) +OTHER_RESPONSE ?Timeout TBSY		RR_11 RR_13 RNR_11 RR_13 REJ_11 RR_13 RR_10 RNR_10 REJ_10 RR_32 RNR_32 REJ_32 I_12 RR_1(P_F_BIT) FAIL		

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/INIT_LINK			
IDENTIFIER:	**INIT_LINK**			
OBJECTIVE:	This sub-tree is used where an IUT may set up, reset or disconnect the data link.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Start TMO1 ?DISC ?SABM ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DM +OTHER_RESPONSE ?Timeout TMO1 #		 DISC_11 SABM_11 SABM_10 DISC_10 DM_30	 FAIL	 Discard is not allowed

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/IUT_SENDS_I_FRAMES			
IDENTIFIER:	**IUT_SENDS_I_FRAMES** (N:INTEGER; ACK:BOOLEAN)			
OBJECTIVE:	This sub-tree is to observe that the IUT sends a number of I-frames.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Repeat I_FRAME_EXCH(ACK,STEP) Until # [STEP=N-1] I_FRAME_EXCH(ACK:BOOLEAN; # STEP:INTEGER) (STEP:=STEP+1) !I (I.NS:=V_S,I.NR:=V_R) (V_S:=(V_S+1) MOD Md) Start TMO1 ?I [I.NS=V_R] [ACK=TRUE] (V_R:=(V_R+1)MOD Md) +NORMAL_INFORMATION_ # TRANSFER ->ISIF +OTHER_RESPONSE ?Timeout TMO1	 ISIF 	 I_30 I_12 	 FAIL	(1) (2) (2)
EXTENDED COMMENTS: (1) ACK is used to indicate if tester will acknowledge I frames sent by the IUT. (2) Information field shall be as in PIXIT item 15.				

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/IUT_RETRANSMITS_I_FRAME			
IDENTIFIER:	**IUT_RETRANSMITS_I_FRAME** (N:INTEGER)			
OBJECTIVE:	This sub-tree is to observe that the IUT retransmits an unacknowledged I frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
Repeat RECV_I_FRAME(STEP) Until # [STEP=N-1] RECV_I_FRAME(STEP:INTEGER) (STEP:=STEP+1) Start TMO1 ?I [I.NS=V_R][I.NR=V_S](P_F_BIT:=I.P) (V_R:=(V_R+1) MOD Md) !RR (RR.NR:=V_R) # +NORMAL_INFORMATION_ # TRANSFER -> IRIF +OTHER_RESPONSE ?Timeout TMO1	IRIF	I_12 RR_1(P_F_BIT)	 FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/RECEIVE_SOME_SUP_FRAME			
IDENTIFIER:	**RECEIVE_SOME_SUP_FRAME**			
OBJECTIVE:	This sub-tree is to receive from the IUT some supervisory response frame. This may be needed before sending an FRMR from the tester in the information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
!RR (RR.NR:=V_R) Start TMO1 ?RR ?RNR +OTHER_RESPONSE ?Timeout TMO1		RR_31 RR_33 RNR_33	 FAIL	

TEST STEP DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/CommonLib/OTHER_RESPONSE			
IDENTIFIER:	**OTHER_RESPONSE**			
OBJECTIVE:	This sub-tree is used where an IUT may set up, reset or disconnect the link spontaneously, leading to an Inconclusive verdict.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
?SABM		SABM_12	INCONC	Inconc. response
?DISC		DISC_12	INCONC	Inconc. response
?DM		DM_30	INCONC	Inconc. response
?Otherwise			FAIL	Unacceptable response
#				

5.5 Verification of the disconnected phase

If the PIXIT claims that the disconnected phase is unreachable then the tests in this clause are not selected.

5.5.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_101			
IDENTIFIER:	**DL1_101**			
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to a DISC/P=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !DISC Start TMO1 ?DM +DL1_CHK ?DM -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1 	 DISC_31 DM_31 DM_30 	 (PASS) FAIL	 No response

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_102			
IDENTIFIER:	**DL1_102**			
PURPOSE:	Verify that the IUT sends a DM/F=0 in response to a DISC/P=0 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !DISC Start TMO1 ?DM +DL1_CHK +OTHER_RESPONSE ?Timeout TMO1	 	 DISC_30 DM_30 	 (PASS) FAIL	 No response

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_103			
IDENTIFIER:	**DL1_103**			
PURPOSE:	Verify that the IUT sends a UA/F=1 or a DM/F=1 in response to a SABM/P=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE				
!SABM		SABM_31		
Start TMO1				
?UA	1	UA_31	(PASS)	
+DL4_CHK1				
?DM		DM_31	(PASS)	
+DL1_CHK				
?DM		DM_30		
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	No response

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_104			
IDENTIFIER:	**DL1_104**			
PURPOSE:	Verify that the IUT sends a UA/F=0 or a DM/F=0 in response to a SABM/P=0 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE				
!SABM		SABM_30		
Start TMO1				
?UA		UA_30	(PASS)	
+DL4_CHK1				
?DM		DM_30	(PASS)	
+DL1_CHK				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	No response

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_105			
IDENTIFIER:	**DL1_105**			
PURPOSE:	Verify that the IUT reacts properly in the disconnected phase on receiving a DM/F=0.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE				
!DM		DM_10		
Start TMO1				
?SABM	1	SABM_11	(PASS)	
+DL3_CHK				
?SABM [IUT_TYPE="X25_1980"]		SABM_10	(PASS)	
+DL3_CHK				
?DISC		DISC_11	(PASS)	
+DL2_CHK				
?DISC [IUT_TYPE="X25_1980"]		DISC_10	(PASS)	
+DL2_CHK				
?DM		DM_30		
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			(PASS)	Discarded
+DL1_CHK				

5.5.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_201			
IDENTIFIER:	**DL1_201**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of a command frame with undefined or not implemented control field with P=1, either discards the frame or sends a DM/F=1 response frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='03FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE		1	HEX_1 DM_31 DM_30	 (PASS) PASS	(1) See ISO 7776, 5.3.4
EXTENDED COMMENTS: (1) String '03FF'H is a command frame with an undefined or not implemented control field with P=1.					

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_202			
IDENTIFIER:	**DL1_202**			
PURPOSE:	Verify that the IUT discards a response frame with an undefined or not implemented control field with F=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='01FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE		1	HEX_1 DM_30	 (PASS)	(1)
EXTENDED COMMENTS: (1) String '01FF'H is a response frame with undefined or not implemented control field with F=1.					

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_203			
IDENTIFIER:	**DL1_203**			
PURPOSE:	Verify that the IUT discards a SABM/P=1 with an address different from A, B, C or D in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !SABM Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	SABM_41 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_204			
IDENTIFIER:	**DL1_204**			
PURPOSE:	Verify that the IUT discards a SABM/P=1 with an FCS error in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !FCS_ERROR (FCS_ERROR.String:= # '033F'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	FCS_ERR_1 DM_30	(PASS)	(1)
EXTENDED COMMENTS: (1) String '033F'H is a SABM/P=1 frame with an associated FCS error.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_205 IDENTIFIER: **DL1_205** PURPOSE: Verify that the IUT discards a DM/F=1 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !DM Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	DM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_206 IDENTIFIER: **DL1_206** PURPOSE: Verify that the IUT discards a DM/F=0 with an information field in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='010FFF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	HEX_1 DM_30	(PASS)	(1)
EXTENDED COMMENTS: (1) String '010FFF'H is a DM/F=0 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_207			
IDENTIFIER:	**DL1_207**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of a SABM/P=1 with an information field, either discards the frame or sends a DM/F=1 response frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='033FFF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE	1	HEX_1 DM_31 DM_30	 (PASS) PASS	(1)
EXTENDED COMMENTS: (1) String '033FFF'H is a SABM/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_208			
IDENTIFIER:	**DL1_208**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of a UA/F=0 with an information field discards the frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0163FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	HEX_1 DM_30	 (PASS) .	(1)
EXTENDED COMMENTS: (1) String '0163FF'H is a UA/F=0 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_209			
IDENTIFIER:	**DL1_209**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of an RR/P=1 with an information field, either discards the frame or sends a DM/F=1 response frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0311FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE	 1 	 HEX_1 DM_31 DM_30 	 (PASS) PASS 	 (1)
EXTENDED COMMENTS: (1) String '0311FF'H is an RR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_210			
IDENTIFIER:	**DL1_210**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of an RNR/P=1 with an information field, either discards the frame or sends a DM/F=1 response frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0315FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE	 1 	 HEX_1 DM_31 DM_30 	 (PASS) PASS 	 (1)
EXTENDED COMMENTS: (1) String '0315FF'H is an RNR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL1/DL1_211				
IDENTIFIER:	**DL1_211**				
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of a REJ/P=1 with an information field, either discards the frame or sends a DM/F=1 response frame.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0319FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE		 1 	 HEX_1 DM_31 DM_30 	 (PASS) PASS 	 (1)
EXTENDED COMMENTS: (1) String '0319FF'H is a REJ/P=1 frame with an added information field of one octet of all "1"s.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL1/DL1_212				
IDENTIFIER:	**DL1_212**				
PURPOSE:	Verify that the IUT discards an I/P=0 frame containing an information field longer than the maximum established length in the disconnected phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !LONG (LONG.NS:=0,LONG.NR:=0) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE		 1 	 LONG_30 DM_30 	 (PASS) 	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_213			
IDENTIFIER:	**DL1_213**			
PURPOSE:	Verify that the IUT discards a DISC/P=0 with an information field in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0343FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	 1 	 HEX_1 DM_30 	 (PASS) 	 (1)
EXTENDED COMMENTS: (1) String '0343FF'H is a DISC/P=0 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_214			
IDENTIFIER:	**DL1_214**			
PURPOSE:	Verify that, in the disconnected phase, the IUT upon receipt of a DISC/P=1 with an information field, either discards the frame or sends a DM/F=1 response frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='0353FF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM ?DM -> 1 +OTHER_RESPONSE	 1 	 HEX_1 DM_31 DM_30 	 (PASS) PASS 	 (1)
EXTENDED COMMENTS: (1) String '0353FF'H is a DISC/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_215 IDENTIFIER: **DL1_215** PURPOSE: Verify that the IUT discards a SABM/P=0 with an information field in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !HEX (HEX.String:='032FFF'H) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	 1 	 HEX_1 DM_30 	 (PASS) 	 (1)
EXTENDED COMMENTS: (1) String '032FFF'H is a SABM/P=0 frame with an added information field of one octet of all "1"s.				

5.5.3 Inopprortune frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_301			
IDENTIFIER:	**DL1_301**			
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to an I/P=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?DM ?DM -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1 	 I_31 DM_31 DM_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_302			
IDENTIFIER:	**DL1_302**			
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to an RR/P=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RR (RR.NR:=V_R) Start TMO1 ?DM ?DM -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1 	 RR_31 DM_31 DM_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL1/DL1_303				
IDENTIFIER:	**DL1_303**				
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to an RNR/P=1 in the disconnected phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?DM ?DM -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 RNR_31 DM_31 DM_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL1/DL1_304				
IDENTIFIER:	**DL1_304**				
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to a REJ/P=1 in the disconnected phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?DM ?DM -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 REJ_31 DM_31 DM_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_305 IDENTIFIER: **DL1_305** PURPOSE: Verify that the IUT discards a UA/F=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !UA Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	UA_10 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_306 IDENTIFIER: **DL1_306** PURPOSE: Verify that the IUT discards a UA/F=1 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !UA Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	UA_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_307 IDENTIFIER: **DL1_307** PURPOSE: Verify that the IUT discards an FRMR/F=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	FRMR_10 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_308 IDENTIFIER: **DL1_308** PURPOSE: Verify that the IUT discards an FRMR/F=1 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	FRMR_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_309 IDENTIFIER: **DL1_309** PURPOSE: Verify that the IUT discards an I/P=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	I_30 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_310 IDENTIFIER: **DL1_310** PURPOSE: Verify that the IUT discards an RR/F=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RR (RR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RR_12 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_311 IDENTIFIER: **DL1_311** PURPOSE: Verify that the IUT discards an RNR/F=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RNR_12 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_312 IDENTIFIER: **DL1_312** PURPOSE: Verify that the IUT discards a REJ/F=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	REJ_12 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_313			
IDENTIFIER:	**DL1_313**			
PURPOSE:	Verify that the IUT discards an RR/F=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RR (RR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RR_13 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_314			
IDENTIFIER:	**DL1_314**			
PURPOSE:	Verify that the IUT discards an RNR/F=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RNR_13 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_315			
IDENTIFIER:	**DL1_315**			
PURPOSE:	Verify that the IUT discards a REJ/F=1 in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	REJ_13 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_316 IDENTIFIER: **DL1_316** PURPOSE: Verify that the IUT discards an RR/P=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RR (RR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RR_30 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_317 IDENTIFIER: **DL1_317** PURPOSE: Verify that the IUT discards an RNR/P=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	RNR_30 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL1/DL1_318 IDENTIFIER: **DL1_318** PURPOSE: Verify that the IUT discards a REJ/P=0 in the disconnected phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE	1	REJ_30 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL1/DL1_319			
IDENTIFIER:	**DL1_319**			
PURPOSE:	Verify that the IUT discards an I/P=0 frame with no information field in the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL1_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL1_CHK ?DM -> 1 +OTHER_RESPONSE		1	I_32 DM_30	(PASS)	

5.6 Verification of IUT initiated link disconnection phase

This clause contains tests for the verification of IUT initiated data link layer link disconnection phase with T1 started. If the PIXIT claims that the link disconnection phase is unreachable, then the tests in this clause are not selected.

5.6.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_101			
IDENTIFIER:	**DL2_101**			
PURPOSE:	Verify that the IUT sends a UA/F=0 in response to a DISC/P=0 received in the link disconnection phase. This situation corresponds to a DISC and DISC collision.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE				
!DISC		DISC_30		(1)
Start TMO1				
?UA		UA_30	(PASS)	
[IUT_TYPE="X25_1980"]				(2)
+DL2_CHK				
[IUT_TYPE<>"X25_1980"]				(3)
[COLLISION_CASE=1]				
+DL2_CHK				
[COLLISION_CASE=2]				
[STABLE_DP]				
+DL1_CHK				
+INIT_LINK				
[COLLISION_CASE=3] Start T1				
?Timeout T1				
[STABLE_DP]				
+DL1_CHK				
+INIT_LINK				
+OTHER_RESPONSE				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

EXTENDED COMMENTS:

(1) The situation shown in this test case corresponds to a DISC and DISC collision.

(2) IUT of X.25-1980 vintage are expected to remain in the link disconnection phase waiting for a UA response.

(3) IUT conforming to ISO 7776 or CCITT X.25-1984 have the option of remaining in the link disconnection phase or changing to the disconnected phase. This is specified in subclause 5.3.5 and in subclause 2.4.4.5.1 of ISO 7776 and CCITT X.25-1984, respectively.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_102			
IDENTIFIER:	**DL2_102**			
PURPOSE:	Verify that the IUT sends a UA/F=1 in response to a DISC/P=1 received in the link disconnection phase. This situation corresponds to a DISC and DISC collision.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !DISC Start TMO1 ?UA [IUT_TYPE="X25_1980"] +DL2_CHK [IUT_TYPE<>"X25_1980"] [COLLISION_CASE=1] +DL2_CHK [COLLISION_CASE=2] [STABLE_DP] +DL1_CHK +INIT_LINK [COLLISION_CASE=3] Start T1 ?Timeout T1 [STABLE_DP] +DL1_CHK +INIT_LINK +OTHER_RESPONSE +OTHER_RESPONSE ?Timeout TMO1		DISC_31 UA_31	(PASS) FAIL	(1) (2) (3)
EXTENDED COMMENTS: (1) The situation shown in this test case corresponds to a DISC and DISC collision. (2) IUT of X.25-1980 vintage are expected to remain in the link disconnection phase waiting for a UA response. (3) IUT conforming to ISO 7776 or CCITT X.25-1984 have the option of remaining in the link disconnection phase or changing to the disconnected phase. This is specified in subclause 5.3.5 and in subclause 2.4.4.5.1 of ISO 7776 and CCITT X.25-1984, respectively.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_103			
IDENTIFIER:	**DL2_103**			
PURPOSE:	Verify that the IUT sends a DM/F=0 in response to a SABM/P=0 received in the link disconnection phase. This situation corresponds to a DISC and SABM collision. The IUT is expected to enter the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !SABM Start TMO1 ?DM +OTHER_RESPONSE ?Timeout TMO1		SABM_30 DM_30	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_104			
IDENTIFIER:	**DL2_104**			
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to a SABM/P=1 received in the link disconnection phase. This situation corresponds to a DISC and SABM collision. The IUT is expected to enter the disconnected phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !SABM Start TMO1 ?DM +OTHER_RESPONSE ?Timeout TMO1		SABM_31 DM_31	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_105			
IDENTIFIER:	**DL2_105**			
PURPOSE:	Verify valid IUT behaviour in the link disconnection phase upon receiving a proper DM response to the DISC sent by the IUT.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !DM # [STABLE_DP] +DL1_CHK +INIT_LINK		DM_1(P_F_BIT)	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_106			
IDENTIFIER:	**DL2_106**			
PURPOSE:	Verify that in the link disconnection phase, upon receiving a DM/F=0 response, when the last DISC command from the IUT was with P=1, the IUT considers the DM response to represent a collision condition and remains in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE [P_F_BIT='1'B] !DM Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE [P_F_BIT='0'B]		DM_10	(PASS) INCONC	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_107			
IDENTIFIER:	**DL2_107**			
PURPOSE:	Verify valid IUT behaviour in the link disconnection phase upon receiving a proper UA response.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !UA # [STABLE_DP] +DL1_CHK +INIT_LINK		UA_1(P_F_BIT)	(PASS)	

5.6.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_201			
IDENTIFIER:	**DL2_201**			
PURPOSE:	Verify that, in the link disconnection phase, the IUT discards a command frame with an undefined or not implemented control field with P=1.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='03FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '03FF'H is a command frame with undefined or not implemented control field with P=1.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_202			
IDENTIFIER:	**DL2_202**			
PURPOSE:	Verify that the IUT discards a response frame with an undefined or not implemented control field with F=1 in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='01FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '01FF'H is a response frame with an undefined or not implemented control field with F=1.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_203 IDENTIFIER: **DL2_203** PURPOSE: Verify that the IUT discards a DISC/P=0 with information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='0343FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0343FF'H is a DISC/P=0 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_204 IDENTIFIER: **DL2_204** PURPOSE: Verify that the IUT discards a SABM/P=1 with an information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='033FFF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '013FFF'H is a SABM/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_205 IDENTIFIER: **DL2_205** PURPOSE: Verify that the IUT discards a UA with an appropriate F bit setting, but with an added information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE [P_F_BIT='0'B] !HEX (HEX.String:='0163FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE [P_F_BIT='1'B] !HEX (HEX.String:='0173FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1 HEX_1	 (PASS) (PASS)	(1) (2)
EXTENDED COMMENTS: (1) String '0163FF'H is a UA/F=0 frame with an added information field of one octet of all "1"s. (2) String '0173FF'H is a UA/F=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_206 IDENTIFIER: **DL2_206** PURPOSE: Verify that the IUT discards a DM with an appropriate F bit setting, but with an additional information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE [P_F_BIT='0'B] !HEX (HEX.String:='010FFF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE [P_F_BIT='1'B] !HEX (HEX.String:='011FFF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1 HEX_1	 (PASS) (PASS)	(1) (2)
EXTENDED COMMENTS: (1) String '010FFF'H is a DM/F=0 frame with an added information field of one octet of all "1"s. (2) String '011FFF'H is a DM/F=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_207			
IDENTIFIER:	**DL2_207**			
PURPOSE:	Verify that the IUT discards an I/P=1 frame containing an information field longer than the maximum established length in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !LONG (LONG.NS:=0,LONG.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		LONG_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_208			
IDENTIFIER:	**DL2_208**			
PURPOSE:	Verify that the IUT discards an RR/P=1 with an information field in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='0311FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0311FF'H is an RR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_209			
IDENTIFIER:	**DL2_209**			
PURPOSE:	Verify that the IUT discards an RNR/P=1 with an information field in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='0315FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0315FF'H is an RNR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_210 IDENTIFIER: **DL2_210** PURPOSE: Verify that the IUT discards a REJ/P=1 with an information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !HEX (HEX.String:='0319FF'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0319FF'H is a REJ/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_211 IDENTIFIER: **DL2_211** PURPOSE: Verify that the IUT discards a DISC with an address different from A, B, C or D in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !DISC Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		DISC_40	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_212 IDENTIFIER: **DL2_212** PURPOSE: Verify that the IUT discards a DISC/P=0 with an FCS error, in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !FCS_ERROR (FCS_ERROR.String:= # '0343'H) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		FCS_ERR_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0343'H is a DISC/P=0 frame with an associated FCS error.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_213			
IDENTIFIER:	**DL2_213**			
PURPOSE:	Verify that in the case of X.25-1980, if the IUT is in the link disconnection phase and if the last DISC command from the IUT was with P=0, then a DM/F=1 is discarded and the IUT remains in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE [P_F_BIT='0'B] !DM Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE [P_F_BIT='1'B]		DM_11	(PASS) INCONC	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL2/DL2_214			
IDENTIFIER:	**DL2_214**			
PURPOSE:	Verify that in the link disconnection phase, upon receiving an improper UA response (invalid F bit), the IUT discards the UA and remains in the link disconnection phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE [P_F_BIT='0'B] !UA Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE [P_F_BIT='1'B] !UA Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		UA_11 UA_10	(PASS) (PASS)	X.25-1980 only.

5.6.3 Inopportune frames

X.25-1980 does not cover what is done in these situations.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_301 IDENTIFIER: **DL2_301** PURPOSE: Verify that the IUT discards an RR/P=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RR_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_302 IDENTIFIER: **DL2_302** PURPOSE: Verify that the IUT discards an RR/P=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RR_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_303 IDENTIFIER: **DL2_303** PURPOSE: Verify that the IUT discards an RNR/P=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RNR_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_304 IDENTIFIER: **DL2_304** PURPOSE: Verify that the IUT discards an RNR/P=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RNR_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_305 IDENTIFIER: **DL2_305** PURPOSE: Verify that the IUT discards a REJ/P=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		REJ_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_306 IDENTIFIER: **DL2_306** PURPOSE: Verify that the IUT discards a REJ/P=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		REJ_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_307 IDENTIFIER: **DL2_307** PURPOSE: Verify that the IUT discards an FRMR/F=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		FRMR_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_308 IDENTIFIER: **DL2_308** PURPOSE: Verify that the IUT discards an RR/F=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_309 IDENTIFIER: **DL2_309** PURPOSE: Verify that the IUT discards an RR/F=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_310 IDENTIFIER: **DL2_310** PURPOSE: Verify that the IUT discards an RNR/F=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RNR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_311 IDENTIFIER: **DL2_311** PURPOSE: Verify that the IUT discards an RNR/F=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		RNR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_312 IDENTIFIER: **DL2_312** PURPOSE: Verify that the IUT discards a REJ/F=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		REJ_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_313 IDENTIFIER: **DL2_313** PURPOSE: Verify that the IUT discards a REJ/F=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		REJ_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_314 IDENTIFIER: **DL2_314** PURPOSE: Verify that the IUT discards an FRMR/F=1 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		FRMR_11	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_315 IDENTIFIER: **DL2_315** PURPOSE: Verify that the IUT discards an I/P=0 in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		I_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_316 IDENTIFIER: **DL2_316** PURPOSE: Verify that the IUT discards an I/P=1 received in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		I_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL2/DL2_317 IDENTIFIER: **DL2_317** PURPOSE: Verify that the IUT discards an I/P=0 frame with no information field in the link disconnection phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL2_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL2_CHK +OTHER_RESPONSE		I_32	(PASS)	

5.7 Verification of link set-up phase

5.7.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_101			
IDENTIFIER:	**DL3_101**			
PURPOSE:	Verify that the IUT sends a UA/F=0 in response to a SABM/P=0 received in the link set-up phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE					
!SABM			SABM_30		(1)
Start TMO1					
?UA			UA_30	(PASS)	
[IUT_TYPE="X25_1980"]					
+DL3_CHK					(2)
[IUT_TYPE<>"X25_1980"]					(3)
[COLLISION_CASE=1]					
+DL3_CHK					
[COLLISION_CASE=2]					
+DL4_CHK2					
[COLLISION_CASE=3] Start T1					
?Timeout T1		1			
+DL4_CHK1					
+ACCEPTABLE_UNEXPECTED_					
# DL4					
-> 1					
+OTHER_RESPONSE					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

EXTENDED COMMENTS:

(1) The situation shown in this test case corresponds to a SABM and SABM collision.

(2) IUT of X.25-1980 vintage are expected to remain in the link set-up phase waiting for a UA response.

(3) IUT conforming to ISO 7776 or CCITT X.25-1984 have the option of remaining in the link set-up phase or changing to the information transfer phase. This is specified in clause 5.3.5 and clause 2.4.4.5.1 of ISO 7776 and CCITT X.25-1984, respectively.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_102 IDENTIFIER: **DL3_102** PURPOSE: Verify that the IUT sends a UA/F=1 in response to a SABM/P=1 received in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !SABM Start TMO1 ?UA [IUT_TYPE="X25_1980"] +DL3_CHK [IUT_TYPE<>"X25_1980"] [COLLISION_CASE=1] +DL3_CHK [COLLISION_CASE=2] +DL4_CHK2 [COLLISION_CASE=3] Start T1 ?Timeout T1 +DL4_CHK1 +ACCEPTABLE_UNEXPECTED_ # DL4 -> 1 +OTHER_RESPONSE +OTHER_RESPONSE ?Timeout TMO1	 1 	 SABM_31 UA_31 	 (PASS) FAIL	 (1) (2) (3)
EXTENDED COMMENTS: (1) The situation shown in this test case corresponds to a SABM and SABM collision. (2) IUT of X.25-1980 vintage are expected to remain in the link set-up phase waiting for a UA response. (3) IUT conforming to ISO 7776 or CCITT X.25-1984 have the option of remaining in the link set-up phase or changing to the information transfer phase. This is specified in clause 5.3.5 and clause 2.4.4.5.1 of ISO 7776 and CCITT X.25-1984, respectively.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_103 IDENTIFIER: **DL3_103** PURPOSE: Verify that the IUT sends a DM/F=0 in response to a DISC/P=0 in the link set-up phase. This situation corresponds to a SABM and DISC collision. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !DISC Start TMO1 ?DM +OTHER_RESPONSE ?Timeout TMO1	 	 DISC_30 DM_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_104			
IDENTIFIER:	**DL3_104**			
PURPOSE:	Verify that the IUT sends a DM/F=1 in response to a DISC/P=1 in the link set-up phase. This situation corresponds to a SABM and DISC collision.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !DISC Start TMO1 ?DM +OTHER_RESPONSE ?Timeout TMO1		DISC_31 DM_31	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_105			
IDENTIFIER:	**DL3_105**			
PURPOSE:	Verify that in the link set-up phase, upon receiving a proper UA response, the IUT enters the information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !UA # +DL4_CHK2		UA_1(P_F_BIT)	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_106			
IDENTIFIER:	**DL3_106**			
PURPOSE:	Verify that in the link set-up phase, the IUT ignores a DM/F=0, in case of a SABM and DM collision where SABM from IUT has P=1.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE [P_F_BIT='1'B] !DM Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE [P_F_BIT='0'B]		DM_10	(PASS) INCONC	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_107			
IDENTIFIER:	**DL3_107**			
PURPOSE:	Verify that in the link set-up phase, if the last SABM command from the IUT was with P=1, then upon receiving a DM/F=1 response, the IUT either sends a DISC/P=1 or a SABM/P=1 or a DM/F=0 or does not respond.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE				
[P_F_BIT='1'B]				
!DM		DM_11		
Start TMO1				
?DISC		DISC_11	PASS	
?SABM		SABM_11	PASS	
?DM		DM_30	PASS	
?Timeout TMO1			(PASS)	
+DL1_CHK				
+OTHER_RESPONSE				
[P_F_BIT='0'B]			INCONC	

5.7.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_201 IDENTIFIER: **DL3_201** PURPOSE: Verify that the IUT discards a command frame with an undefined or not implemented control field with P=1 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='03FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '03FF'H is a command frame with undefined or not implemented control field with P=1.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_202 IDENTIFIER: **DL3_202** PURPOSE: Verify that the IUT discards a response frame with an undefined or not implemented control field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='01FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '01FF'H is a response frame with undefined or not implemented control field.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_203 IDENTIFIER: **DL3_203** PURPOSE: Verify that the IUT discards a UA with an appropriate F bit setting but with an additional information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE [P_F_BIT='1'B] !HEX (HEX.String:='0173FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE [P_F_BIT='0'B] !HEX (HEX.String:='0163FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1 HEX_1	 (PASS) (PASS)	(1) (2)
EXTENDED COMMENTS: (1) String '0173FF'H is a UA/F=1 frame with added information field of one octet of all "1"s. (2) String '0163FF'H is a UA/F=0 frame with added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_204 IDENTIFIER: **DL3_204** PURPOSE: Verify that the IUT discards a DISC/P=0 with information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='0343FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	 (PASS)	(1)
EXTENDED COMMENTS: (1) String '0343FF'H is a DISC/P=0 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_205 IDENTIFIER: **DL3_205** PURPOSE: Verify that the IUT discards a SABM/P=1 with information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='033FFF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '033FFF'H is a SABM/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_206 IDENTIFIER: **DL3_206** PURPOSE: Verify that the IUT discards a DM with an appropriate F bit but with an information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE [P_F_BIT='0'B] !HEX (HEX.String:='010FFF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
[P_F_BIT='1'B] !HEX (HEX.String:='011FFF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(2)
EXTENDED COMMENTS: (1) String '010FFF'H is a DM/F=0 frame with added information field of one octet of all "1"s. (2) String '011FFF'H is a DM/F=1 frame with added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_207 IDENTIFIER: **DL3_207** PURPOSE: Verify that the IUT discards an I/P=1 with an information field which is longer than the maximum established length in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !LONG (LONG.NS:=0,LONG.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		LONG_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_208 IDENTIFIER: **DL3_208** PURPOSE: Verify that the IUT discards an I/P=0 with no information field while in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		I_32	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_209 IDENTIFIER: **DL3_209** PURPOSE: Verify that the IUT discards an RR/P=1 with an information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='0311FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0311FF'H is an RR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_210 IDENTIFIER: **DL3_210** PURPOSE: Verify that the IUT discards an RNR/P=1 with an information field in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='0315FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0315FF'H is an RNR/P=1 frame with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_211 IDENTIFIER: **DL3_211** PURPOSE: Verify that the IUT discards a REJ/P=1 with an information field in the link set-up phase . DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !HEX (HEX.String:='0319FF'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '0319FF'H is a REJ/P=1 with an added information field of one octet of all "1"s.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_212 IDENTIFIER: **DL3_212** PURPOSE: Verify that the IUT discards a SABM/P=1 with an address different from A, B, C or D while in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !SABM Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		SABM_41	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_213 IDENTIFIER: **DL3_213** PURPOSE: Verify that the IUT discards a SABM/P=1 with an FCS error in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !FCS_ERROR (FCS_ERROR.String:='033F'H) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		FCS_ERR_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '033F'H is a SABM/P=1 with an associated FCS error.				

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL3/DL3_214				
IDENTIFIER:	**DL3_214**				
PURPOSE:	Verify that in the link set-up phase, if an IUT is of X.25-1980 type, it discards a DM/F=1 if the last SABM from the IUT was P=0.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE [P_F_BIT='0'B] !DM Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE [P_F_BIT='1'B]			DM_11	(PASS) INCONC	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL3/DL3_215				
IDENTIFIER:	**DL3_215**				
PURPOSE:	Verify that the IUT discards a UA with an invalid F bit in the link set-up phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE [P_F_BIT='1'B] !UA Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE [P_F_BIT='0'B] !UA Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE			UA_10 UA_11	(PASS) (PASS)	

5.7.3 Inopportune frames

X.25-1980 does not cover what is done in these situations.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_301			
IDENTIFIER:	**DL3_301**			
PURPOSE:	Verify that the IUT discards an RR/P=1 in the link set-up phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RR_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL3/DL3_302			
IDENTIFIER:	**DL3_302**			
PURPOSE:	Verify that the IUT discards an RR/P=0 in the link set-up phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RR_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_303 IDENTIFIER: **DL3_303** PURPOSE: Verify that the IUT discards an RR/F=1 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_304 IDENTIFIER: **DL3_304** PURPOSE: Verify that the IUT discards an RR/F=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_305 IDENTIFIER: **DL3_305** PURPOSE: Verify that the IUT discards an FRMR/F=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		FRMR_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_306 IDENTIFIER: **DL3_306** PURPOSE: Verify that the IUT discards an FRMR/F=1 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		FRMR_11	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_307 IDENTIFIER: **DL3_307** PURPOSE: Verify that the IUT discards an I/P=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		I_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_308 IDENTIFIER: **DL3_308** PURPOSE: Verify that the IUT discards an I/P=1 received in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		I_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_309 IDENTIFIER: **DL3_309** PURPOSE: Verify that the IUT discards an RNR/P=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RNR_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_310 IDENTIFIER: **DL3_310** PURPOSE: Verify that the IUT discards an RNR/F=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RNR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_311 IDENTIFIER: **DL3_311** PURPOSE: Verify that the IUT discards an RNR/P=1 received in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RNR_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_312 IDENTIFIER: **DL3_312** PURPOSE: Verify that the IUT discards a REJ/P=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		REJ_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_313 IDENTIFIER: **DL3_313** PURPOSE: Verify that the IUT discards a REJ/F=0 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		REJ_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_314 IDENTIFIER: **DL3_314** PURPOSE: Verify that the IUT discards a REJ/P=1 received in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		REJ_31	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_315 IDENTIFIER: **DL3_315** PURPOSE: Verify that the IUT discards an RNR/F=1 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		RNR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL3/DL3_316 IDENTIFIER: **DL3_316** PURPOSE: Verify that the IUT discards a REJ/F=1 in the link set-up phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL3_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL3_CHK +OTHER_RESPONSE		REJ_13	(PASS)	

5.8 Verification of information transfer phase

5.8.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_101			
IDENTIFIER:	**DL4_101**			
PURPOSE:	Verify that the IUT sends a UA/F=1 in response to a DISC/P=1 received in the information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !DISC Start TMO1 ?UA [STABLE_DP] +DL1_CHK +INIT_LINK +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	DISC_31 UA_31	(PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_102			
IDENTIFIER:	**DL4_102**			
PURPOSE:	Verify that the IUT, upon receiving a SABM/P=1 in the information transfer phase, either sends a UA/F=1 or a DM/F=1.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !SABM Start TMO1 ?DM [STABLE_DP] +DL1_CHK +INIT_LINK ?UA +DL4_CHK1 +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	SABM_31 DM_31 UA_31	(PASS) (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_103				
IDENTIFIER:	**DL4_103**				
PURPOSE:	Verify valid IUT behaviour on receiving FRMR/F=0 in the information transfer phase.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!RR (RR.NR:=V_R)			RR_31		
Start TMO1					
?RR		1	RR_33		
!FRMR (FRMR.VS:=V_S,			FRMR_10	(PASS)	
# FRMR.VR:=V_R)					
Start TMO1					
?DISC		2	DISC_11		
?SABM			SABM_11		
?SABM [IUT_TYPE="X25_1980"]			SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_ DL4					
-> 2					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
?RNR			RNR_31		
!FRMR (FRMR.VS:=V_S,			FRMR_10	(PASS)	
# FRMR.VR:=V_R)					
Start TMO1					
?DISC		3	DISC_11		
?SABM			SABM_11		
?SABM [IUT_TYPE="X25_1980"]			SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_ DL4					
-> 3					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_104 IDENTIFIER: **DL4_104** PURPOSE: Verify that the IUT acknowledges a valid I/P=0 frame. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=V_S,I.NR:=V_R) (V_S:=V_S+1) Start TMO1 ?I [I.NR=V_S][I.NS=V_R] (V_R:=V_R+1) ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	I_30 I_10 RR_32 RNR_32	 PASS PASS PASS FAIL	

EXTENDED COMMENTS:

Verify that, when the IUT is in the information transfer phase and receives a valid I frame whose send sequence number is equal to the IUT receive state variable V(R), the IUT accepts the information field of this frame, increments its receive state variable V(R) by one, and takes one of the following actions:

a) If the IUT is not in a busy condition now, then:
   1) If an I frame is available for transmission, the IUT transmits this frame with N(R) value set to acknowledge the received I frame, or the IUT transmits an RR frame first to acknowledge the received I frame.
   2) If no I frame is available, the IUT transmits an RR frame with N(R) equal to the value of IUT V(R).

b) If the IUT is now in the busy condition, it transmits an RNR frame with N(R) equal to the value of the IUT V(R).

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_105 IDENTIFIER: **DL4_105** PURPOSE: Verify that the IUT acknowledges a valid I/P=1 frame. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=V_S,I.NR:=V_R) (V_S:=V_S+1) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1 	 I_31 RR_33 RNR_33 	 PASS PASS FAIL	
EXTENDED COMMENTS: Verify that, when the IUT is in the information transfer phase and receives a valid I/P=1 frame whose send sequence number equals the IUT receive state variable V(R), the IUT accepts the information field of this frame, increments its receive state variable V(R) by one, and takes one of the following actions: a) If the IUT is not in a busy condition now, the IUT transmits an RR/F=1 frame with N(R) equal to the value of the IUT receive state variable V(R). b) If the IUT is now in the busy condition, it transmits an RNR frame with N(R) equal to the value of the IUT V(R).				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_106 IDENTIFIER: **DL4_106** PURPOSE: Verify that the IUT responds to a proper RR/P=1 command in the information transfer phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !RR(RR.NR:=V_R) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1 	 RR_31 RR_33 RNR_33 	 PASS PASS FAIL	
EXTENDED COMMENTS: Verify that, when the IUT is in the information transfer phase and receives a valid RR/P=1 frame whose send sequence number equals the IUT receive state variable V(R), the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1. Since at this point there are no outstanding acknowledgements from the tester, the IUT does one of the following: a) If the IUT is not in a busy condition now, the IUT transmits an RR/F=1 frame with N(R) equal to the value of the IUT receive state variable V(R). b) If the IUT is now in the busy condition, it transmits an RNR frame with N(R) equal to the value of the IUT V(R).				

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_107				
IDENTIFIER:	**DL4_107**				
PURPOSE:	Verify that in the information transfer phase if the IUT receives a REJ/P=1 command frame, then the IUT sets its send state variable V(S) to the N(R) of the received REJ frame control field and retransmits the corresponding I frame. Prior to this transmission the IUT sends an RR/F=1 response to the received REJ/P=1 command frame.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE +IUT_SENDS_I_FRAMES (2FALSE) # (V_R:=1) !REJ (REJ.NR:=V_R) # Start TMO1 ?RR [RR.NR=V_S] +IUT_RETRANSMITS_I_FRAME (1) # +OTHER_RESPONSE ?Timeout TMO1			 REJ_31 RR_33 	 (PASS) FAIL	 IUT sends 2 I frames. Rejects last I frame. Retransmits last I frame.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_108			
IDENTIFIER:	**DL4_108**			
PURPOSE:	Verify that in the information transfer phase if the IUT receives a REJ/P=0 command frame, then the IUT sets its send state variable V(S) to the N(R) of the received REJ frame control field and retransmits the corresponding I frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE +IUT_SENDS_I_FRAMES (2,FALSE) # (V_R:=1) !REJ (REJ.NR:=V_R) # +IUT_RETRANSMITS_I_FRAME (1) #			REJ_30	(PASS)	IUT sends 2 I frames. Rejects last I frame. IUT retransmits last I frame.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_109			
IDENTIFIER:	**DL4_109**			
PURPOSE:	Verify that in the information transfer phase if the IUT receives a REJ/F=0 response frame, then the IUT sets its send state variable V(S) to the N(R) of the received REJ frame control field and retransmits the corresponding I frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE +IUT_SENDS_I_FRAMES (2,FALSE) # (V_R:=1) !REJ (REJ.NR:=V_R) # +IUT_RETRANSMITS_I_FRAME(1) #			REJ_12	(PASS)	IUT sends 2 I frames. Rejects last I frames. IUT retransmits last I frame.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_110				
IDENTIFIER:	**DL4_110**				
PURPOSE:	Verify valid IUT behaviour in the information transfer phase when the IUT receives a DM/F=0 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !DM Start TMO1 ?DISC ?SABM ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DM +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1	 DM_10 DISC_11 SABM_11 SABM_10 DISC_10 DM_30	 (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_111				
IDENTIFIER:	**DL4_111**				
PURPOSE:	Verify that when the IUT receives, during the information transfer phase, an I frame with an N(S) greater than the IUT V(R) value, simulating (for example) a situation of one or more I frame(s) not received due to transmission error, it responds with an REJ command or response frame with an N(R) value equal to the value of the IUT receive state variable, V(R).				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=(V_S+1)MOD Md,I.NR:=V_R) #			I_30		Out of sequence N(S)
Start TMO1 ?REJ [REJ.NR=V_S] +DL4_CHK2 ?REJ [REJ.NR=V_S] +DL4_CHK2 ?REJ [REJ.NR=V_S] !RR (RR.NR:=V_R) +DL4_CHK2 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	REJ_10 REJ_32 REJ_11 RR_11	(PASS) (PASS) (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_112			
IDENTIFIER:	**DL4_112**			
PURPOSE:	Verify that if the IUT receives a valid I/P=0 frame with zero length information field, while it is in the information transfer phase, it increments by one the value of its receive state variable and responds with an I or RR or RNR frame with an N(R) equal to the updated value of the IUT receive state variable.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NR:=V_R,I.NS:=V_S) (V_S:=V_S+1) Start TMO1 ?I [I.NR=V_S][I.NS=V_R] ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 I_32 I_10 RR_32 RNR_32 	 PASS PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_113				
IDENTIFIER:	**DL4_113**				
PURPOSE:	Verify that if the IUT receives two valid I frames with a single flag in between, while it is in the information transfer phase, it increments by two the value of its receive state variable and responds with an RR or RNR frame with an N(R) equal to the updated value of the IUT receive state variable. The P bit is set to "1" on the second I frame from the tester.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!STACK <fm1^I, fm2^I>			I_30, I_31		Stack up two I frames, (1).
#					
(I.NS:=V_S, I.NR:=V_R)			I_30		1st frame parameter
#					
(V_S:=V_S+1)					
(I.NS:=V_S, I.NR:=V_R)			I_31		2nd frame parameter
#					
(V_S:=V_S+1)					
!SEND <fm1^I, fm2^I>			I_30, I_31		Send stacked I frames.
#					
Start TMO1					
?RR [RR.NR=V_S]		1	RR_33	PASS	
?RNR [RNR.NR=V_S]			RNR_33	PASS	
+NORMAL_INFORMATION_					
# TRANSFER_2					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) This is intended to send two I frames with a single flag in between.					

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL4/DL4_114
IDENTIFIER:	**DL4_114**
PURPOSE:	Verify that the IUT in the information transfer phase, manages its send window correctly. For this test, the IUT send window is the range of values for the IUT send state variable V(S), starting at the current value and going up to (V(S) + k), where k is the IUT parameter for maximum number of outstanding I frames. For the purpose of this test, the IUT transmits I frames that have an N(S) value within the send window. Acknowledgements from tester rotate (increment sequentially by one) the send window for the IUT. The IUT window rotation is observed over the entire valid range of sequence numbers. The IUT stops the window rotation function when outstanding acknowledgements are not sent from the tester.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE (TOT_STEP:=0) +IUT_SENDS_I_FRAMES(2,TRUE) (TOT_STEP:=TOT_STEP+2) +IUT_SENDS_I_FRAMES(k,FALSE) (TOT_STEP:=TOT_STEP+k) Start HALF_T1 # ?Timeout HALF_T1 (V_R:=(V_R+k) MOD Md) [TOT_STEP<Md] -> again +DL4_CHK1 +OTHER_RESPONSE #	again		(PASS)	(1) Wait for T1_HALF finished Md outside window (if failed!)

EXTENDED COMMENTS:
(1) TOT_STEP is a variable to count the total number of steps, to cover the full range of sequence number for IUT V(S).

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL4/DL4_115
IDENTIFIER:	**DL4_115**
PURPOSE:	Verify that the IUT sends a UA/F=0 in response to a DISC/P=0 received in the information transfer phase.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !DISC Start TMO1 ?UA +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	DISC_30 UA_30	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_116				
IDENTIFIER:	**DL4_116**				
PURPOSE:	Verify that the IUT upon receiving a SABM/P=0 in the information transfer phase either sends a UA/F=0 or a DM/F=0 frame.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !SABM Start TMO1 ?DM [STABLE_DP] +DL1_CHK +INIT_LINK ?UA +DL4_CHK1 +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	SABM_30 DM_30 UA_30	(PASS) (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_117				
IDENTIFIER:	**DL4_117**				
PURPOSE:	Verify that, when the IUT is in the information transfer phase and receives a valid RR/P=0, the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1. Since at this point there are no outstanding acknowledgements from the tester, the IUT does one of the following: a) If the IUT is not in a busy condition, the IUT either transmits an RR/F=0 with N(R) equal to the value of the IUT receive state variable V(R), or nothing. b) If the IUT is now in the busy condition, it transmits an RNR/F=0 with N(R) equal to the value of the IUT V(R).				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION REFERENCES		LABEL	CONSTRAINT	VERDICT	COMMENTS
+DL4_STATE !RR (RR.NR:=V_R) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] ?Timeout TMO1 +DL4_CHK1 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE		1	RR_30 RR_32 RNR_32	PASS PASS (PASS)	

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL4/DL4_118
IDENTIFIER:	**DL4_118**
PURPOSE:	Verify that, when the IUT is in the information transfer phase and receives a valid RR/F=0, the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1. Since at this point there are no outstanding acknowledgements from the tester, the IUT does one of the following: a) If the IUT is not in a busy condition, the IUT either transmits an RR/F=0 with N(R) equal to the value of the IUT receive state variable V(R), or nothing. b) If the IUT is now in the busy condition, it transmits an RNR/F=0 with N(R) equal to the value of the IUT V(R).
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE				
!RR (RR.NR:=V_R)		RR_12		
Start TMO1				
?RR [RR.NR=V_S]	1	RR_32	PASS	
?RNR [RNR.NR=V_S]		RNR_32	PASS	
?Timeout TMO1			(PASS)	
+DL4_CHK1				
+NORMAL_INFORMATION_TRANSFER				
-> 1				
+OTHER_RESPONSE				

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPBDL4//DL4_119
IDENTIFIER:	**DL4_119**
PURPOSE:	Verify that an IUT does not transmit information frames while the tester is in the busy condition and that after the tester exits the busy condition by transmitting an RR/P=0, the IUT sends an I frame.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE				
+IUT_SENDS_I_FRAMES (2,FALSE)				
Start TWO_T1				
?RR	1	RR_11		
+TESTER_BUSY				
?RNR		RNR_11		
+TESTER_BUSY				
?REJ		REJ_11		
+TESTER_BUSY				
+NORMAL_INFORMATION_TRANSFER				
-> 1				
+OTHER_RESPONSE				
?Timeout TWO_T1			FAIL	

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TESTER_BUSY				
!RNR (RNR.NR:=V_R)		RNR_13		
Start TMO1				
?I [I.NR=V_S][I.NS=V_R]	2	I_12		
# [IUT_TYPE<>"ISO_7776"]				
(P_F_BIT:=I.P)				
!RNR (RNR.NR=V_R,		RNR_14		
# RNR.PF:=P_F_BIT)				
Start TMO1				
?I	3	I_12	FAIL	
+NORMAL_INFORMATION_				
# TRANSFER				
-> 3				
+OTHER_RESPONSE				
?Timeout TMO1				
!RR (RR.NR:=V_R)		RR_30		
Start TMO1				
?I	4	I_12	PASS	
+NORMAL_INFORMATION_				
# TRANSFER				
-> 4				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	
?I		I_12	FAIL	
+NORMAL_INFORMATION_TRANSFER				
-> 2				
+OTHER_RESPONSE				
?Timeout TMO1				
!RR (RR.NR:=V_R)		RR_30		
Start TMO1				
?I	5	I_12	PASS	
+NORMAL_INFORMATION_				
# TRANSFER				
-> 5				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

5.8.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_201 IDENTIFIER: **DL4_201** PURPOSE: Verify valid IUT behaviour when the IUT receives, in the information transfer phase, a UA/F=0 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	UA_10 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_202 IDENTIFIER: **DL4_202** PURPOSE: Verify valid IUT behaviour when the IUT receives, in the information transfer phase, a UA/F=1 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	UA_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_203				
IDENTIFIER:	**DL4_203**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, in the information transfer phase, an unsolicited FRMR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	FRMR_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_204				
IDENTIFIER:	**DL4_204**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, in the information transfer phase, an unsolicited DM/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !DM Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	DM_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_205				
IDENTIFIER:	**DL4_205**				
PURPOSE:	Verify that if the IUT, in the information transfer phase, receives an I/P=0 frame with an invalid N(R) value, then the IUT transmits an FRMR/F=0, with a properly encoded Z bit.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!I (I.NS:=V_S,I.NR:=V_R+7)			I_30		Invalid N(R)
Start TMO1					
?FRMR [FRMR.ZYXW='1000'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_206				
IDENTIFIER:	**DL4_206**				
PURPOSE:	Verify that the IUT, in the information transfer phase, transmits an FRMR/F=0 with a properly encoded Y bit, on receiving an I/P=0 frame with an information length which exceeds the maximum established length.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!LONG (LONG.NR:=V_R,LONG.NS:=V_S)			LONG_30		Long (I) frame
Start TMO1					
?FRMR [FRMR.ZYXW='0100'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_207				
IDENTIFIER:	**DL4_207**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=1 in response to a command frame with undefined or not implemented control field with P=1. Verify also that the C/R bit is set to "0" along with a properly encoded W bit.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!HEX (HEX.String:='03FF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0001'B]		1	FRMR_32	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_32	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '03FF'H is a command frame with an undefined or not implemented control field with P=1.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_208				
IDENTIFIER:	**DL4_208**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to a response frame with an undefined or not implemented control field with F=0. Verify also that the C/R bit is set to "1" along with a properly encoded W bit.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!HEX (HEX.String:='01EF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0001'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '01EF'H is a response frame with an undefined or not implemented control field with F=0.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_209				
IDENTIFIER:	**DL4_209**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to a DM/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !HEX (HEX.String:='010FFF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='1'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='1'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 HEX_1 FRMR_30 FRMR_30 	 PASS PASS FAIL	 DM/F=0 with single octet info. field of "1"s.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_210				
IDENTIFIER:	**DL4_210**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to a DISC/P=0 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !HEX (HEX.String:='0343FF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='0'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='0'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 HEX_1 FRMR_30 FRMR_30 	 PASS PASS FAIL	 DISC/P=0 with single octet info field of "1"s.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_211				
IDENTIFIER:	**DL4_211**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=1 in response to a SABM/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !HEX (HEX.String:='033FFF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='0'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='0'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_31 FRMR_31	 PASS PASS FAIL	SABM/P=1 with single octet info. field of "1"s.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_212				
IDENTIFIER:	**DL4_212**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to a UA/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !HEX (HEX.String:='0163FF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='1'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='1'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_30 FRMR_30	 PASS PASS FAIL	UA/F=0 with single octet info. field of "1"s.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_213				
IDENTIFIER:	**DL4_213**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to an RR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!RR_L (RR_L.NR:=V_R)			RR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_214				
IDENTIFIER:	**DL4_214**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to an RNR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!RNR_L (RNR_L.NR:=V_R)			RNR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_215				
IDENTIFIER:	**DL4_215**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=0 in response to a REJ/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!REJ_L (REJ_L.NR:=V_R)			REJ_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_216				
IDENTIFIER:	**DL4_216**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=1 in response to an RR/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!RR_L (RR_L.NR:=V_R)			RR_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_217				
IDENTIFIER:	**DL4_217**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=1 in response to an RNR/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!RNR_L (RNR_L.NR:=V_R)			RNR_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_218				
IDENTIFIER:	**DL4_218**				
PURPOSE:	Verify that in the information transfer phase, the IUT transmits an FRMR/F=1 in response to a REJ/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
!REJ_L (REJ_L.NR:=V_R)			REJ_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL4					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_219			
IDENTIFIER:	**DL4_219**			
PURPOSE:	Verify that the IUT discards an I frame with an FCS error in the information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !FCS_ERROR (FCS_ERROR.String:='031000'H) # Start TMO1 ?Timeout TMO1 +DL4_CHK2 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE		1	FCS_ERR_1	(PASS)	I frame with FCS error

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL4/DL4_220			
IDENTIFIER:	**DL4_220**			
PURPOSE:	Verify that the IUT discards an I/P=1 frame with an incorrect address in information transfer phase.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !I (I.NS:=V_S,I.NR:=V_R) # Start TMO1 ?Timeout TMO1 +DL4_CHK2 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE		1	I_4(1)	(PASS)	I frame with invalid address

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_221 IDENTIFIER: **DL4_221** PURPOSE: Verify that the IUT discards a frame which is too short in the information transfer phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !HEX (HEX.String:='03'H) Start TMO1 ?Timeout TMO1 +DL4_CHK2 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE	1	HEX_1	(PASS)	Frame <32 bits

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_222 IDENTIFIER: **DL4_222** PURPOSE: Verify that the IUT discards an I/P=1 frame which is aborted before the closing flag in the information transfer phase. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !ABORT (ABORT.String:='031000'H) #		ABORT_1		I frame abortion, (1).
Start TMO1 ?Timeout TMO1 +DL4_CHK2 +NORMAL_INFORMATION_TRANSFER -> 1 +OTHER_RESPONSE	1		(PASS)	
EXTENDED COMMENTS: (1) Frame abortion may take place anywhere after the string, in which case extra bits will be added before abortion.				

5.8.3 Inopportune frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_301				
IDENTIFIER:	**DL4_301**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives in the information transfer phase, an unsolicited RR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !RR (RR.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	RR_13 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL4/DL4_302				
IDENTIFIER:	**DL4_302**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives in the information transfer phase, an unsolicited RNR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	RNR_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL4/DL4_303 IDENTIFIER: **DL4_303** PURPOSE: Verify valid IUT behaviour when the IUT receives in the information transfer phase, an unsolicited REJ/F=1 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL4 -> 1 +OTHER_RESPONSE ?Timeout TMO1	 1	REJ_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

5.9 Verification of frame reject condition

5.9.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_101			
IDENTIFIER:	**DL5_101**			
PURPOSE:	Verify that the IUT sends a UA/F=1 in response to a DISC/P=1 in the frame rejection condition.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !DISC Start TMO1 ?UA +OTHER_RESPONSE ?Timeout TMO1		DISC_31 UA_31	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_102			
IDENTIFIER:	**DL5_102**			
PURPOSE:	Verify that the IUT, upon receiving a SABM/P=1 in the frame rejection condition, either sends a UA/F=1 or a DM/F=1.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !SABM Start TMO1 ?DM ?UA +OTHER_RESPONSE ?Timeout TMO1		SABM_31 DM_31 UA_31	 PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_103			
IDENTIFIER:	**DL5_103**			
PURPOSE:	Verify valid IUT behaviour in the frame rejection condition when the IUT receives an FRMR/F=0 response.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) +INIT_LINK		FRMR_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_104 IDENTIFIER: **DL5_104** PURPOSE: Verify valid IUT behaviour in the frame rejection condition when the IUT receives a DM/F=0 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !DM +INIT_LINK		DM_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_105 IDENTIFIER: **DL5_105** PURPOSE: Verify that the IUT sends a UA/F=0 in response to a DISC/P=0 received in the frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !DISC Start TMO1 ?UA +OTHER_RESPONSE ?Timeout TMO1		DISC_30 UA_30	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_106 IDENTIFIER: **DL5_106** PURPOSE: Verify that the IUT upon receiving a SABM/P=0 in the frame rejection condition either sends a UA/F=0 or a DM/F=0. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !SABM Start TMO1 ?DM ?UA +OTHER_RESPONSE ?Timeout TMO1		SABM_30 DM_30 UA_30	PASS PASS FAIL	

5.9.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_201				
IDENTIFIER:	**DL5_201**				
PURPOSE:	Verify that if the IUT, while in the frame rejection condition, receives an I/P=1 frame with an invalid N(R) value, it transmits an FRMR/F=1 with the FRMR information field encoding resulting from DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !I (I.NS:=V_S,I.NR:=V_R+5) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			I_31 FRMR_34(IS,IR,Z_W)	 PASS FAIL	Invalid N(R)

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_202				
IDENTIFIER:	**DL5_202**				
PURPOSE:	Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to a command frame with undefined or not implemented control field with P=1. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='03FF'H) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			HEX_1 FRMR_34(IS,IR,Z_W)	 PASS FAIL	(1)
EXTENDED COMMENTS: (1) String '03FF'H is a command frame with undefined or not implemented control field with P=1.					

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_203 IDENTIFIER: **DL5_203** PURPOSE: Verify that in the frame rejection condition, the IUT discards a response frame with an undefined or not implemented control field with F=0. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='01EF'H) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		HEX_1	(PASS)	(1)
EXTENDED COMMENTS: (1) String '01FF'H is a command frame with an undefined or not implemented control field with F=0.				

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_204 IDENTIFIER: **DL5_204** PURPOSE: Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to a SABM/P=1 with an information field. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='033FFF'H) # # Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1		HEX_1 FRMR_34(IS,IR,Z_W)	 PASS FAIL	SABM/P=1 with single octet info. field.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_205				
IDENTIFIER:	**DL5_205**				
PURPOSE:	Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to a DISC/P=1 with an information field. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='0353FF'H) # # Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			HEX_1 FRMR_34(IS,IR,Z_W)	 PASS FAIL	DISC/P=1 with single octet info. field.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_206				
IDENTIFIER:	**DL5_206**				
PURPOSE:	Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to an RR/P=1 with an information field. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR_L (RR_L.NR:=V_R) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			 RR_L_31 FRMR_34(IS,IR,Z_W)	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_207				
IDENTIFIER:	**DL5_207**				
PURPOSE:	Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to an RNR/P=1 with an information field. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR_L (RNR_L.NR:=V_R) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			RNR_L_31 FRMR_34(IS,IR,Z_W)	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_208				
IDENTIFIER:	**DL5_208**				
PURPOSE:	Verify that in the frame rejection condition, the IUT transmits an FRMR/F=1 in response to a REJ/P=1 with an information field. Verify also that the information field of the FRMR frame is encoded as in DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ_L (REJ_L.NR:=V_R) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			REJ_L_31 FRMR_34(IS,IR,Z_W)	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_209			
IDENTIFIER:	**DL5_209**			
PURPOSE:	Verify that in the frame rejection condition, the IUT discards a UA/F=0 with an information field.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='0163FF'H) # # Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		HEX_1	(PASS)	UA/F=0 with single octet info. field

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_210			
IDENTIFIER:	**DL5_210**			
PURPOSE:	Verify that in the frame rejection condition, the IUT discards a DM/F=0 with an information field.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !HEX (HEX.String:='010FFF'H) # # Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		HEX_1	(PASS)	DM/F=0 with single octet info. field.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_211			
IDENTIFIER:	**DL5_211**			
PURPOSE:	Verify that in the frame rejection condition, the IUT discards an RR/F=0 with an information field.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR_L (RR_L.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RR_L_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_212 IDENTIFIER: **DL5_212** PURPOSE: Verify that in the frame rejection condition, the IUT discards an RNR/F=0 with an information field. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR_L (RNR_L.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RNR_L_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_213 IDENTIFIER: **DL5_213** PURPOSE: Verify that in the frame rejection condition, the IUT discards a REJ/F=0 with an information field. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ_L (REJ_L.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		REJ_L_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_214 IDENTIFIER: **DL5_214** PURPOSE: Verify that the IUT discards an unsolicited UA/F=0 response in the frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !UA Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		UA_10	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_215 IDENTIFIER: **DL5_215** PURPOSE: Verify that the IUT discards an unsolicited UA/F=1 response in the frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !UA Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		UA_11	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_216 IDENTIFIER: **DL5_216** PURPOSE: Verify that the IUT discards an unsolicited DM/F=1 response in the frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !DM Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		DM_11	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_217 IDENTIFIER: **DL5_217** PURPOSE: Verify that the IUT discards a SABM/P=0 with an incorrect address in frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !SABM # # Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		SABM_40	(PASS)	SABM/P=0 with invalid address.

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_218 IDENTIFIER: **DL5_218** PURPOSE: Verify that the IUT discards a SABM/P=0 with an FCS error, in frame rejection condition. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !FCS_ERROR (FCS_ERROR.String:='032F'H) # Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		FCS_ERR_1	(PASS)	SABM/P=0 with FCS error

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_219 IDENTIFIER: **DL5_219** PURPOSE: Verify that the IUT, in the frame rejection condition on receiving an I/P=1 frame with an information field which exceeds the maximum established length, transmits an FRMR frame with F=1 and with the FRMR information field encoding resulting from DL5_STATE. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !LONG (LONG.NR:=V_R,LONG.NS:=V_S) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1		LONG_31 FRMR_34(IS,IR,Z_W)	PASS FAIL	Long I frame

5.9.3 Inopportune frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_301				
IDENTIFIER:	**DL5_301**				
PURPOSE:	Verify that the IUT in the frame rejection condition either discards an I/P=0 or transmits an FRMR/F=0 with the information field encoding resulting from DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			I_30 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_302				
IDENTIFIER:	**DL5_302**				
PURPOSE:	Verify that the IUT in the frame rejection condition sends an FRMR/F=1 with the FRMR information field encoding resulting from DL5_STATE, in response to an I/P=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !I (I.NS:=0,I.NR:=0) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			 I_31 FRMR_34(IS,IR,Z_W)	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_303				
IDENTIFIER:	**DL5_303**				
PURPOSE:	Verify that the IUT in the frame rejection condition sends an FRMR/F=1 with the FRMR information field encoding resulting from DL5_STATE, in response to an RR/P=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR (RR.NR:=0) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			RR_31 FRMR_34(IS,IR,Z_W)	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_304				
IDENTIFIER:	**DL5_304**				
PURPOSE:	Verify that the IUT in the frame rejection condition sends an FRMR/F=1 with the FRMR information field encoding resulting from DL5_STATE, in response to an RNR/P=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR (RNR.NR:=0) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			RNR_31 FRMR_34(IS,IR,Z_W)	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_305				
IDENTIFIER:	**DL5_305**				
PURPOSE:	Verify that the IUT in the frame rejection condition sends an FRMR/F=1 with the FRMR information field encoding resulting from DL5_STATE, in response to a REJ/P=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ (REJ.NR:=0) Start TMO1 ?FRMR # +OTHER_RESPONSE ?Timeout TMO1			REJ_31 FRMR_34(IS,IR,Z_W)	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_306				
IDENTIFIER:	**DL5_306**				
PURPOSE:	Verify that the IUT in the frame rejection condition either discards an RR/P=0, or sends an FRMR/F=0 with the FRMR information field encoding resulting from DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			RR_30 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_307			
IDENTIFIER:	**DL5_307**			
PURPOSE:	Verify that the IUT in the frame rejection condition either discards an RNR/P=0 , or sends an FRMR/F=0 with the FRMR information field encoding resulting from DL5_STATE.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			RNR_30 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL5/DL5_308			
IDENTIFIER:	**DL5_308**			
PURPOSE:	Verify that the IUT in the frame rejection condition either discards a REJ/P=0 , or sends an FRMR/F=0 with the FRMR information field encoding resulting from DL5_STATE.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			REJ_30 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_309 IDENTIFIER: **DL5_309** PURPOSE: Verify that the IUT in the frame rejection condition discards an RR/F=1. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_310 IDENTIFIER: **DL5_310** PURPOSE: Verify that the IUT in the frame rejection condition discards an RNR/F=1. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RNR_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_311 IDENTIFIER: **DL5_311** PURPOSE: Verify that the IUT in the frame rejection condition discards a REJ/F=1 DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		REJ_13	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_312 IDENTIFIER: **DL5_312** PURPOSE: Verify that the IUT in the frame rejection condition discards an RR/F=0. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RR (RR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_313 IDENTIFIER: **DL5_313** PURPOSE: Verify that the IUT in the frame rejection condition discards an RNR/F=0. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !RNR (RNR.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		RNR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL5/DL5_314 IDENTIFIER: **DL5_314** PURPOSE: Verify that the IUT in the frame rejection condition discards a REJ/F=0. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !REJ (REJ.NR:=0) Start TMO1 ?Timeout TMO1 +DL5_CHK +OTHER_RESPONSE		REJ_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_315				
IDENTIFIER:	**DL5_315**				
PURPOSE:	Verify that the IUT in the frame rejection condition on receiving an I/P=0 frame with no information field, either discards the I/P=0 or sends an FRMR/F=0 with the FRMR information field encoding resulting from DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !I (I.NS:=V_S,I.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			I_32 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL5/DL5_316				
IDENTIFIER:	**DL5_316**				
PURPOSE:	Verify that if the IUT in the frame rejection condition receives an I/P=0 frame with an out of sequence N(S), either discards the I/P=0 or transmits an FRMR/F=0 with the FRMR information field encoding resulting from DL5_STATE.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL5_STATE !I (I.NS:=(V_S+2) MOD Md,I.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL5_CHK ?FRMR # +OTHER_RESPONSE			 I_30 FRMR_33(IS,IR,Z_W)	 (PASS) PASS	 Incorrect N(S)

5.10 Verification of IUT busy condition

If the PIXIT claims that the IUT busy condition is unreachable, then the tests in this clause are not selected.

5.10.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_101				
IDENTIFIER:	**DL6_101**				
PURPOSE:	Verify that the IUT sends a UA/F=1 in response to a DISC/P=1 in the IUT busy condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !DISC Start TMO1 ?UA +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	DISC_31 UA_31	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_102				
IDENTIFIER:	**DL6_102**				
PURPOSE:	Verify that the IUT upon receiving a SABM/P=1 in the IUT busy condition, either sends a UA/F=1 or a DM/F=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !SABM Start TMO1 ?DM ?UA +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	SABM_31 DM_31 UA_31	PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL6/DL6_103
IDENTIFIER:	**DL6_103**
PURPOSE:	Verify that, when a CCITT X.25-1980 or 1984 IUT is in the IUT busy condition, and receives a valid I/P=1 whose send sequence number equals the IUT receive state variable V(R), the IUT accepts and processes the contents of the N(R) field and returns an RNR/F=1 response. The received I frame may or may not be acknowledged by the IUT.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE				
!I (I.NS:=V_S,I.NR:=V_R)		I_31		
Start TMO1				
?RNR [RNR.NR=V_S]	1	RNR_33	PASS	
?RNR [RNR.NR=(V_S+1) MOD Md]		RNR_33	PASS	
+ACCEPTABLE_UNEXPECTED_DL6				
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL6/DL6_104
IDENTIFIER:	**DL6_104**
PURPOSE:	Verify that, when the IUT is in the IUT busy condition, and receives a valid RR/P=0 whose receive sequence number equals the IUT send state variable V(S), the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1. Verify also that the IUT processes this N(R) value and either returns an RNR/F=0, or nothing. This test only applies when the minimum busy time is considerably larger than TMO1.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE				
!RR(RR.NR:=V_R)		RR_30		
Start TMO1				
?RNR [RNR.NR=V_S]	1	RNR_32	PASS	
?Timeout TMO1			(PASS)	
+DL6_CHK				
+ACCEPTABLE_UNEXPECTED_DL6				
-> 1				
+OTHER_RESPONSE				

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_105				
IDENTIFIER:	**DL6_105**				
PURPOSE:	Verify that, when the IUT is in the IUT busy condition, and receives a valid RR/P=1 whose receive sequence number equals the IUT send state variable V(S), the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1. Verify also that the IUT returns an RNR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RR(RR.NR:=V_R) Start TMO1 ?RNR [RNR.NR=V_S] +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	RR_31 RNR_33	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_106				
IDENTIFIER:	**DL6_106**				
PURPOSE:	Verify that while in the IUT busy condition, if the IUT receives an RNR/P=0 command, then the IUT sets its send state variable V(S) to N(R) of the received RNR control field and does not transmit subsequent I frames, until the busy condition is cleared from the tester. Verify also that the IUT either sends no response to this command frame, or sends an RNR/F=0 to confirm that IUT is still in the busy condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL6_CHK ?RNR [RNR.NR=V_S] +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		1	RNR_30 RNR_32	(PASS) PASS	

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL6/DL6_107
IDENTIFIER:	**DL6_107**
PURPOSE:	Verify that while in the IUT busy condition, if the IUT receives an RNR/P=1 command, then the IUT sets its send state variable V(S) to N(R) of the received RNR frame control field and does not transmit (or retransmit) the corresponding I frames until an RR or REJ frame is received from the tester. Verify also that the IUT responds with an RNR/F=1 to confirm that the IUT is still in the busy condition.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE				
!RNR (RNR.NR:=V_R)		RNR_31		
Start TMO1				
?RNR [RNR.NR=V_S]	1	RNR_33	PASS	
+ACCEPTABLE_UNEXPECTED_DL6				
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

TEST CASE DYNAMIC BEHAVIOUR	
REFERENCE:	LAPB/DL6/DL6_108
IDENTIFIER:	**DL6_108**
PURPOSE:	Verify that when the IUT receives, during the IUT busy condition, a DM/F=0 response, it either initiates link resetting procedure or returns a DM/F=0 response to ask the tester to initiate link set-up procedure.
DEFAULTS REFERENCE:	

BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE				
!DM		DM_30	(PASS)	
Start TMO1				
?DISC	1	DISC_11		
?SABM		SABM_11		
?SABM [IUT_TYPE="X25_1980"]		SABM_10		
?DISC [IUT_TYPE="X25_1980"]		DISC_10		
?DM		DM_30		
+ACCEPTABLE_UNEXPECTED_DL6				
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_109				
IDENTIFIER:	**DL6_109**				
PURPOSE:	Verify that the IUT sends a UA/F=0 in response to a DISC/P=0 in the IUT busy condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !DISC Start TMO1 ?UA +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 DISC_30 UA_30 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_110				
IDENTIFIER:	**DL6_110**				
PURPOSE:	Verify that the IUT upon receiving a SABM/P=0 in the IUT busy condition either sends a UA/F=0 or a DM/F=0.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !SABM Start TMO1 ?DM ?UA +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 SABM_30 DM_30 UA_30 	 PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_111				
IDENTIFIER:	**DL6_111**				
PURPOSE:	Verify that, when the IUT is in the IUT busy condition, and receives a valid RR/F=0 whose receive sequence number equals the IUT send state variable V(S), the IUT considers the N(R) contained in this frame as an acknowledgement of all I frames it has transmitted with an N(S) up to and including the received N(R) - 1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RR(RR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL6_CHK +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		1	RR_12	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_112				
IDENTIFIER:	**DL6_112**				
PURPOSE:	Verify that in the IUT busy condition, if the IUT receives an RNR/F=0 response, the IUT sets its send state variable V(S) to N(R) of the received RNR control field and does not transmit subsequent I frames, until the busy condition is cleared from the tester.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?Timeout TMO1 +DL6_CHK +OTHER_RESPONSE			RNR_12	(PASS)	Discard is OK

5.10.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL6/DL6_201 IDENTIFIER: **DL6_201** PURPOSE: Verify valid IUT behaviour when the IUT receives during the IUT busy condition, a UA/F=0 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	UA_10 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE: LAPB/DL6/DL6_202 IDENTIFIER: **DL6_202** PURPOSE: Verify valid IUT behaviour when the IUT receives during the IUT busy condition, a UA/F=1 response. DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1	1	UA_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_203				
IDENTIFIER:	**DL6_203**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives during the IUT busy condition, an FRMR/F=0 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R)			FRMR_10	(PASS)	
Start TMO1					
?DISC		1	DISC_11		
?SABM			SABM_11		
?SABM [IUT_TYPE="X25_1980"]			SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_204				
IDENTIFIER:	**DL6_204**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives during the IUT busy condition, an FRMR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R)			FRMR_11	(PASS)	
Start TMO1					
?SABM [IUT_TYPE="X25_1980"]		1	SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DISC			DISC_11		
?SABM			SABM_11		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_205				
IDENTIFIER:	**DL6_205**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives during the IUT busy condition, an unsolicited DM/F=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!DM			DM_11	(PASS)	
Start TMO1					
?SABM [IUT_TYPE="X25_1980"]		1	SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DISC			DISC_11		
?SABM			SABM_11		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_206				
IDENTIFIER:	**DL6_206**				
PURPOSE:	Verify that if the IUT, while in the IUT busy condition, receives an I/P=0 frame with an invalid N(R) value, the IUT transmits an FRMR/F=0, with a properly encoded Z bit.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!I (I.NS:=V_S,I.NR:=(V_R+7) MOD Md)			I_30		Invalid N(R)
Start TMO1					
?FRMR [FRMR.ZYXW='1000'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_207				
IDENTIFIER:	**DL6_207**				
PURPOSE:	Verify that the IUT, while in the IUT busy condition, transmits an FRMR with proper Y bit setting, on receiving an I/P=0 frame with an information field which exceeds the maximum established length.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!LONG (LONG.NS:=V_S,LONG.NR:=V_R)			LONG_30		Long I frame
Start TMO1					
?FRMR [FRMR.ZYXW='0100'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_208				
IDENTIFIER:	**DL6_208**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR in response to a command frame with an undefined or not implemented control field with P=1. Verify also that the C/R bit is set to "0" and the W bit is set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION REFERENCES		LABEL	CONSTRAINT	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='03FF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0001'B]		1	FRMR_32	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_32	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '03FF'H is a command frame with an undefined or not implemented control field with P=1.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_209				
IDENTIFIER:	**DL6_209**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR in response to a response frame with an undefined or not implemented control field with F=0. Verify also that the C/R bit is set to "1" and the W bit is set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='01EF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0001'B]		1	FRMR_32	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_32	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '01EF'H is a response frame with an undefined or not implemented control field with F=0.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_210				
IDENTIFIER:	**DL6_210**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to a DM/F=0 frame with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='010FFF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '010FFF'H is a DM/F=0 frame with a single octet information field of all "1"s.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_211				
IDENTIFIER:	**DL6_211**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to a DISC/P=0 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='0343FF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '0343FF'H is a DISC/P=0 frame with a single octet information field of all "1"s.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_212				
IDENTIFIER:	**DL6_212**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=1 in response to a SABM/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='033FFF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '033FFF'H is a SABM/P=1 frame with a single octet information field of all "1"s.					

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL6/DL6_213			
IDENTIFIER:	**DL6_213**			
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to a UA/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!HEX (HEX.String:='0163FF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '0163FF'H is a UA/F=0 frame with a single octet information field of all "1"s.					

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL6/DL6_214			
IDENTIFIER:	**DL6_214**			
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to an RR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!RR_L (RR_L.NR:=V_R)			RR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_215				
IDENTIFIER:	**DL6_215**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to an RNR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!RNR_L (RNR_L.NR:=V_R)			RNR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_216				
IDENTIFIER:	**DL6_216**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=0 in response to a REJ/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!REJ_L (REJ_L.NR:=V_R)			REJ_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_217				
IDENTIFIER:	**DL6_217**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=1 in response to an RR/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!RR_L (RR_L.NR:=V_R)			RR_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_218				
IDENTIFIER:	**DL6_218**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=1 in response to an RNR/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!RNR_L (RNR_L.NR:=V_R)			RNR_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_219				
IDENTIFIER:	**DL6_219**				
PURPOSE:	Verify that in the IUT busy condition, the IUT transmits an FRMR/F=1 in response to a REJ/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!REJ_L (REJ_L.NR:=V_R)			REJ_L_31		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_31	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_31	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_220				
IDENTIFIER:	**DL6_220**				
PURPOSE:	Verify that, when the IUT is in the IUT busy condition, and receives a valid I/P=0 frame whose send sequence number is equal to the IUT receive state variable V(R), the IUT discards the information field of this frame, but processes its N(R) receive sequence number and takes one of the following actions: a) If the IUT is still in a busy state then, it transmits an RNR/F=0 b) The IUT transmits nothing.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE					
!I (I.NS:=V_S,I.NR:=V_R)			I_30		
Start TMO1					
?Timeout TMO1		1		(PASS)	
+DL6_CHK					
?RNR [RNR.NR=V_S]			RNR_32	PASS	
+ACCEPTABLE_UNEXPECTED_DL6					
-> 1					
+OTHER_RESPONSE					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_221				
IDENTIFIER:	**DL6_221**				
PURPOSE:	Verify that, when an ISO 7776 IUT is in the IUT busy condition, and receives a valid I/P=1 whose send sequence number equals the IUT receive state variable V(R), the IUT accepts and processes the contents of the N(R) field and returns an RNR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !I (I.NS:=V_S,I.NR:=V_R) Start TMO1 ?RNR [RNR.NR=V_S] +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	I_31 RNR_33	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_222				
IDENTIFIER:	**DL6_222**				
PURPOSE:	Verify that when the IUT receives, during the IUT busy condition, an I/P=0 frame with an N(S) greater than the IUT V(R) value, simulating (for example) a situation of one or more I frame(s) not received due to transmission error, the IUT either responds with an RNR/F=0 response frame with an N(R) value equal to the value of the IUT receive state variable, V(R) or discards the I/P=0.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !I (I.NS:=(V_S+2)MOD Md,I.NR:=V_R) # Start TMO1 ?RNR [RNR.NR=V_S] ?Timeout TMO1 +DL6_CHK +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		1	I_30 RNR_30	PASS (PASS)	Out of sequence N(S).

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_223				
IDENTIFIER:	**DL6_223**				
PURPOSE:	Verify that the IUT discards an RR/P=1 with an incorrect address in IUT busy condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RR (RR.NR:=V_R) # # Start TMO1 ?Timeout TMO1 +DL6_CHK +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		1	RR_41	(PASS)	RR/P=1 frame with invalid address

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_224				
IDENTIFIER:	**DL6_224**				
PURPOSE:	Verify that the IUT discards an RR/P=1 with an FCS error in the IUT busy condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !FCS_ERROR (FCS_ERROR.String:='0311'H) # Start TMO1 ?Timeout TMO1 +DL6_CHK +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		1	FCS_ERR_1	(PASS)	RR/P=1 frame with FCS error

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL6/DL6_225			
IDENTIFIER:	**DL6_225**			
PURPOSE:	Verify that if the IUT receives a valid I/P=0 frame with zero length information field in the IUT busy condition, it either sends an RNR or discards the received frame.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !I (I.NR:=V_R,I.NS:=V_S) Start TMO1 ?RNR [RNR.NR=V_S] ?Timeout TMO1 +DL6_CHK +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE		 1	 I_32 RNR_32	 PASS (PASS)	

5.10.3 Inopportune frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_301				
IDENTIFIER:	**DL6_301**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the IUT busy condition, an unsolicited RR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RR (RR.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	RR_13 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL6/DL6_302				
IDENTIFIER:	**DL6_302**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the IUT busy condition, an unsolicited RNR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !RNR (RNR.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL6 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	RNR_13 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS)	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL6/DL6_303			
IDENTIFIER:	**DL6_303**			
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the IUT busy condition, an unsolicited REJ/F=1 response.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL6_STATE !REJ (REJ.NR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL6 -> 1 ?Otherwise ?Timeout TMO1		 1	REJ_13 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS) FAIL	

5.11 Verification of sent reject condition

5.11.1 Proper frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_101				
IDENTIFIER:	**DL7_101**				
PURPOSE:	Verify that the IUT sends a UA/F=1 in response to a DISC/P=1 received in the sent reject condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !DISC Start TMO1 ?UA +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 DISC_31 UA_31 	 PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_102				
IDENTIFIER:	**DL7_102**				
PURPOSE:	Verify that the IUT upon receiving a SABM/P=1 in the sent reject condition, either sends a UA/F=1 or a DM/F=1.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !SABM Start TMO1 ?DM ?UA +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 SABM_31 DM_31 UA_31 	 PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_103				
IDENTIFIER:	**DL7_103**				
PURPOSE:	Verify that, when the IUT is in the sent reject condition, and receives a valid I/P=0 frame whose send sequence number is equal to the IUT receive state variable V(R), the IUT accepts the information field of this frame, and processes its N(R) receive sequence number and takes one of the following actions: a) If the IUT is now in a busy state, it transmits an RNR/F=0 b) The IUT transmits an RR/F=0 or an I frame, and clears the sent reject condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !I (I.NS:=V_S,I.NR:=V_R) (V_S:=V_S+1) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] ?I [I.NR=V_S][I.NS=V_R] ?I [I.NR=V_S][I.NS=V_R] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 I_30 RR_32 RNR_32 I_10 I_11 	 PASS PASS PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_104				
IDENTIFIER:	**DL7_104**				
PURPOSE:	Verify that, when the IUT is in the sent reject condition, and receives a valid I/P=1 frame whose send sequence number is equal to the receive state variable V(R), the IUT accepts the information field of this frame, and processes its N(R) receive sequence number and takes one of the following actions: a) If the IUT is now in a busy state, it transmits an RNR/F=1 b) The IUT transmits an RR/F=1 and clears the sent reject condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !I (I.NS:=V_S,I.NR:=V_R) (V_S:=(V_S+1) MOD Md) Start TMO1 ?RR [RR.NR=V_S] ?RNR [RNR.NR=V_S] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 I_31 RR_33 RNR_33 	 PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_105				
IDENTIFIER:	**DL7_105**				
PURPOSE:	Verify that in the sent reject condition, if the IUT receives a REJ/P=0 command, the IUT sets its send state variable V(S) to N(R) of the received REJ control field and retransmits the corresponding I frame(s).				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
+IUT_SENDS_I_FRAMES (2,FALSE)					IUT sends 2 I frames no ack.
#					
!I (I.NS:=V_S+1,I.NR:=V_R)			I_30		N(S) error
Start TMO1					
?REJ [REJ.NR=V_S]			REJ_32		Rejects last I frame.
#					
!REJ (REJ.NR:=(V_R-1) MOD Md)			REJ_30	(PASS)	
+IUT_RETRANSMITS_I_FRAME(1)					IUT transmits last frame.
#					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_106				
IDENTIFIER:	**DL7_106**				
PURPOSE:	Verify that in the sent reject condition, if the IUT receives a REJ/P=1 command, the IUT sets its send state variable V(S) to N(R) of the received REJ control field and retransmits the corresponding I frames.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE					
+IUT_SENDS_I_FRAMES (2,FALSE)					IUT sends 2 I frames no ack.
#					
!I (I.NS:=(V_S+1) MOD Md,I.NR:=V_R)			I_30		N(S) error
Start TMO1					
?REJ [REJ.NR=V_S]			REJ_32		
!REJ (REJ.NR:=(V_R-1) MOD Md)			REJ_31		
Start TMO1					
?RR [RR.NR=V_S]			RR_33	(PASS)	
+IUT_RETRANSMITS_I_FRAME(1)					
?REJ [REJ.NR=V_S]			REJ_33	(PASS)	
+IUT_RETRANSMITS_I_FRAME(1)					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL7/DL7_107			
IDENTIFIER:	**DL7_107**			
PURPOSE:	Verify that when the IUT receives, during the sent reject condition, a DM/F=0 response, it either initiates link resetting procedure or returns a DM/F=0 response to ask the tester to initiate link set-up procedure.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE				
!DM		DM_10	(PASS)	
Start TMO1				
?DISC	1	DISC_11		
?SABM		SABM_11		
?SABM [IUT_TYPE="X25_1980"]		SABM_10		
?DISC [IUT_TYPE="X25_1980"]		DISC_10		
?DM		DM_30		
+ACCEPTABLE_UNEXPECTED_DL7				
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL7/DL7_108			
IDENTIFIER:	**DL7_108**			
PURPOSE:	Verify that if the IUT receives a valid I/P=0 frame with zero length information field in the sent reject condition, it increments by one the value of its receive state variable and responds with an I or RR or RNR with an N(R) equal to the updated value of the IUT receive state variable.			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION	LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE				
!I (I.NR:=V_R,I.NS:=V_S)		I_32		No info. field.
(V_S:=V_S+1)				
Start TMO1				
?I [I.NR=V_S][I.NS=V_R]	1	I_10	PASS	
?RR [RR.NR=V_S]		RR_32	PASS	
?RNR [RNR.NR=V_S]		RNR_32	PASS	
+ACCEPTABLE_UNEXPECTED_DL7				
-> 1				
+OTHER_RESPONSE				
?Timeout TMO1			FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_109				
IDENTIFIER:	**DL7_109**				
PURPOSE:	Verify that the IUT sends a UA/F=0 in response to a DISC/P=0 in the sent reject condition.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !DISC Start TMO1 ?UA +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	DISC_30 UA_30	PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_110				
IDENTIFIER:	**DL7_110**				
PURPOSE:	Verify that the IUT upon receiving a SABM/P=0 while in the sent reject condition either sends a UA/F=0 or a DM/F=0.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !SABM Start TMO1 ?DM ?UA +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	SABM_30 DM_30 UA_30	PASS PASS FAIL	

TEST CASE DYNAMIC BEHAVIOUR				
REFERENCE:	LAPB/DL7/DL7_111			
IDENTIFIER:	**DL7_111**			
PURPOSE:	Verify that in the sent reject condition, if the IUT receives a REJ/F=0 response, the IUT sets its send state variable V(S) to N(R) of the received REJ control field and retransmits the corresponding I frame(s).			
DEFAULTS REFERENCE:				
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL4_STATE +IUT_SENDS_I_FRAMES (2,FALSE) # !I(I.NS:=(V_S+1) MOD Md,I.NR:=V_R) Start TMO1 ?REJ [REJ.NR=V_S] !REJ (REJ.NR:=(V_R-1) MOD Md) +IUT_RETRANSMITS_I_FRAME(1) # +OTHER_RESPONSE ?Timeout TMO1			I_30 REJ_32 REJ_12	(PASS) FAIL	IUT sends 2 I frames no ack. N(S) error IUT retransmits last frame.

5.11.2 Improper frames

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_201				
IDENTIFIER:	**DL7_201**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the sent reject condition, a UA/F=0 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	UA_10 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_202				
IDENTIFIER:	**DL7_202**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the sent reject condition, a UA/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !UA Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	UA_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30	(PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_203				
IDENTIFIER:	**DL7_203**				
PURPOSE:	Verify that when the IUT receives, during the sent reject condition, an FRMR/F=0 response, it either initiates link resetting procedure or returns a DM/F=0 response to ask the tester to initiate link set-up procedure.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?DISC ?SABM ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DM +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 FRMR_10 DISC_11 SABM_11 SABM_10 DISC_10 DM_30 	 (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_204				
IDENTIFIER:	**DL7_204**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the sent reject condition, an FRMR/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !FRMR (FRMR.VS:=V_S,FRMR.VR:=V_R) Start TMO1 ?SABM [IUT_TYPE="X25_1980"] ?DISC [IUT_TYPE="X25_1980"] ?DISC ?SABM ?DM +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		 1 	 FRMR_11 SABM_10 DISC_10 DISC_11 SABM_11 DM_30 	 (PASS) FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_205				
IDENTIFIER:	**DL7_205**				
PURPOSE:	Verify valid IUT behaviour when the IUT receives, during the sent reject condition, an unsolicited DM/F=1 response.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!DM			DM_11	(PASS)	
Start TMO1					
?SABM [IUT_TYPE="X25_1980"]		1	SABM_10		
?DISC [IUT_TYPE="X25_1980"]			DISC_10		
?DISC			DISC_11		
?SABM			SABM_11		
?DM			DM_30		
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_206				
IDENTIFIER:	**DL7_206**				
PURPOSE:	Verify that if the IUT, while in the sent reject condition, receives an I frame with a invalid N(R) value, then the IUT transmits an FRMR/F=0, with a properly encoded Z bit.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!I (I.NS:=V_S,I.NR:=(V_R+7) MOD Md)			I_30		Invalid N(R)
Start TMO1					
?FRMR [FRMR.ZYXW='1000'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_207				
IDENTIFIER:	**DL7_207**				
PURPOSE:	Verify that the IUT in the sent reject condition, transmits an FRMR/F=0 with proper Y bit setting, on receiving an I frame with an information field which exceeds the maximum established length.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!LONG (LONG.NS:=V_S,LONG.NR:=V_R)			LONG_30		Long I frame
Start TMO1					
?FRMR [FRMR.ZYXW='0100'B]		1	FRMR_30	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_208				
IDENTIFIER:	**DL7_208**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=1 in response to a command frame with undefined or not implemented control field with P=1. Verify also that the C/R bit is set to "0" and the W bit is set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!HEX (HEX.String:='03FF'H)			HEX_1		(1)
Start TMO1					
?FRMR [FRMR.ZYXW='0001'B]		1	FRMR_32	PASS	
# [FRMR.CR='0'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_32	PASS	
# [FRMR.CR='0'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	
EXTENDED COMMENTS:					
(1) String '03FF'H is a command frame with undefined or not implemented control field with P=1.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_209				
IDENTIFIER:	**DL7_209**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to a response frame with undefined or not implemented control field with F=0. Verify also that the C/R bit is set to "1" and the W bit is set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !HEX (HEX.String:='01EF'H) Start TMO1 ?FRMR [FRMR.ZYXW='0001'B] # [FRMR.CR='1'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='1'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_30 FRMR_30	PASS PASS FAIL	(1)
EXTENDED COMMENTS: (1) String '01EF'H is a response frame with undefined or not implemented control field with F=0.					

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_210				
IDENTIFIER:	**DL7_210**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to a DM/F=0 with information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !HEX (HEX.String:='010FFF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='1'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='1'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_30 FRMR_30	PASS PASS FAIL	DM/F=0 with single octet info.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_211				
IDENTIFIER:	**DL7_211**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to a DISC/P=0 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !HEX (HEX.String:='0343FF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='0'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='0'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_30 FRMR_30	 PASS PASS FAIL	DISC/P=0 with single octet info.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_212				
IDENTIFIER:	**DL7_212**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=1 in response to a SABM/P=1 with an information field. Verify also that the C/R bit is set to "0" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE !HEX (HEX.String:='033FFF'H) # # Start TMO1 ?FRMR [FRMR.ZYXW='0011'B] # [FRMR.CR='0'B] ?FRMR [FRMR.ZYXW='0000'B] # [FRMR.CR='0'B] # [IUT_TYPE="ISO_7776"] +ACCEPTABLE_UNEXPECTED_DL7 -> 1 +OTHER_RESPONSE ?Timeout TMO1		1	HEX_1 FRMR_31 FRMR_31	 PASS PASS FAIL	SABM/P=1 with single octet info.

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_213				
IDENTIFIER:	**DL7_213**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to a UA/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!HEX (HEX.String:='0163FF'H)			HEX_1		UA/F=0 with single octet info.
#					
#					
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_214				
IDENTIFIER:	**DL7_214**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to an RR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!RR_L (RR_L.NR:=V_R)			RR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_215				
IDENTIFIER:	**DL7_215**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to an RNR/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!RNR_L (RNR_L.NR:=V_R)			RNR_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	

TEST CASE DYNAMIC BEHAVIOUR					
REFERENCE:	LAPB/DL7/DL7_216				
IDENTIFIER:	**DL7_216**				
PURPOSE:	Verify that in the sent reject condition, the IUT transmits an FRMR/F=0 in response to a REJ/F=0 with an information field. Verify also that the C/R bit is set to "1" and the W and X bits are set properly.				
DEFAULTS REFERENCE:					
BEHAVIOUR DESCRIPTION		LABEL	CONSTRAINT REFERENCES	VERDICT	COMMENTS
+DL7_STATE					
!REJ_L (REJ_L.NR:=V_R)			REJ_L_10		
Start TMO1					
?FRMR [FRMR.ZYXW='0011'B]		1	FRMR_30	PASS	
# [FRMR.CR='1'B]					
?FRMR [FRMR.ZYXW='0000'B]			FRMR_30	PASS	
# [FRMR.CR='1'B]					
# [IUT_TYPE="ISO_7776"]					
+ACCEPTABLE_UNEXPECTED_DL7					
-> 1					
+OTHER_RESPONSE					
?Timeout TMO1				FAIL	