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*European Standard (Telecommunications series)*

**Broadband Integrated Services Digital Network (B-ISDN);  
Digital Subscriber Signalling System No. two (DSS2) protocol;  
Point-to-point multiconnection bearer control specification  
in a separated call and bearer environment;  
Part 3: Test Suite Structure and Test Purposes (TSS&TP)  
specification**

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**Reference**

DEN/SPS-05155-3

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# Contents

Intellectual Property Rights .....	4
Foreword .....	4
1 Scope .....	5
2 References .....	5
3 Definitions and abbreviations .....	6
3.1 Definitions .....	6
3.2 Abbreviations .....	6
4 Test Suite Structure (TSS) .....	6
5 Test Purposes (TP) .....	7
5.1 Introduction .....	7
5.1.1 TP naming convention .....	7
5.1.2 Source of TP definition .....	7
5.1.3 Test strategy .....	7
5.2 TPs for the bearer control, layer 3 .....	7
5.2.1 Signalling procedures at the coincident $S_B/T_B$ and at the $T_B$ reference points .....	7
5.2.1.1 Preceding side .....	7
5.2.1.2 Succeeding side .....	8
5.2.1.3 Error handling .....	8
6 Compliance .....	9
7 Requirements for a comprehensive testing service .....	9
Bibliography .....	10
History .....	11

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services Protocols for Advanced Networks (SPAN).

The present document is part 3 of a multi-part EN covering the Digital Subscriber Signalling System No. two (DSS2) protocol; Point-to-point multiconnection bearer control specification in a separated call and bearer environment, as identified below:

- Part 1: "Protocol specification";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification";**
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification ".

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# 1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the  $T_B$  reference point or coincident  $S_B$  and  $T_B$  reference point (as defined in ITU-T Recommendation I.413 [5]) of implementations conforming to the standards for the signalling user-network layer 3 specification for the bearer control protocol for point-to-point multiconnection calls of the Digital Subscriber Signalling System No. two (DSS2) protocol for the pan-European Broadband Integrated Services Digital Network (B-ISDN), EN 302 093-1 [1].

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ETSI EN 302 093-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Point-to-point multiconnection bearer control specification in a separated call and bearer environment; Part 1: Protocol specification".
- [2] ETSI EN 302 093-2: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Point-to-point multiconnection bearer control specification in a separated call and bearer environment; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ISO/IEC 9646-1 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 1: General concepts".
- [4] ISO/IEC 9646-2 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract Test Suite specification".
- [5] ITU-T Recommendation I.413 (1993): "B-ISDN user-network interface".
- [6] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [7] ETSI EN 300 443-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 1: Protocol specification [ITU-T Recommendation Q.2931 (1995), modified]".

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply, in addition to those given in EN 302 093-1 [1].

**Abstract test case:** refer to ISO/IEC 9646-1 [3].

**Abstract Test Method (ATM):** refer to ISO/IEC 9646-1 [3].

**Abstract Test Suite (ATS):** refer to ISO/IEC 9646-1 [3].

**Implementation Under Test (IUT):** refer to ISO/IEC 9646-1 [3].

**Lower tester:** refer to ISO/IEC 9646-1 [3].

**Protocol Implementation Conformance Statement (PICS):** refer to ISO/IEC 9646-1 [3].

**PICS proforma:** refer to ISO/IEC 9646-1 [3].

**Protocol Implementation eXtra Information for Testing (PIXIT):** refer to ISO/IEC 9646-1 [3].

**PIXIT proforma:** refer to ISO/IEC 9646-1 [3].

**Test Purpose (TP):** refer to ISO/IEC 9646-1 [3].

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATM	Abstract Test Method
ATS	Abstract Test Suite
DSS2	Digital Subscriber Signalling System No. two
B-ISDN	Broadband Integrated Services Digital Network
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
TP	Test Purpose
TSS	Test Suite Structure

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## 4 Test Suite Structure (TSS)

- Signalling procedures at the coincident  $S_B/T_B$  and at the  $T_B$  reference points
- Preceding side..... (01)
- Succeeding side ..... (02)
- Error handling..... (03)

**Figure 1: Test suite structure**

## 5 Test Purposes (TP)

### 5.1 Introduction

For each test requirement a TP is defined.

#### 5.1.1 TP naming convention

Tps are numbered, starting at 01, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite (see table 1).

**Table 1: TP identifier naming convention scheme**

Identifier:	<b>&lt;suite_id&gt;_&lt;group&gt;_&lt;nnn&gt;</b>	
<suite_id>	= layer + type of IUT:	"L3BC" for <b>Layer 3 Bearer Control</b>
<group>	= group number:	two character field representing the group reference according to TSS
<nn>	= sequential number:	(01-99)

#### 5.1.2 Source of TP definition

The TPs are based on EN 302 093-1 [1].

#### 5.1.3 Test strategy

As the base standard EN 302 093-1 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification EN 302 093-2 [2].

The TPs are only based on conformance requirements related to the externally observable behaviour of the IUT, and are limited to conceivable situations to which a real implementation is likely to be faced (ETS 300 406 [6]).

## 5.2 TPs for the bearer control, layer 3

The separated bearer control is based on the procedures for basic call connection control as defined in EN 300 443-1 [7]. Test purposes have been written only for the additional procedures required to handle the separated bearer control functions of a multiconnection call.

Unless specified:

- the messages indicated are valid and contain at least the mandatory information elements and possibly optional information elements;
- the information elements indicated are valid and contain at least the mandatory parameters and possibly optional parameters.

### 5.2.1 Signalling procedures at the coincident $S_B/T_B$ and at the $T_B$ reference points

Test purposes for EN 302 093-1 [1], subclause 9.2.

#### 5.2.1.1 Preceding side

##### **L3BC\_01\_01**

Ensure that the IUT, to request the addition of a bearer to a Multiconnection call, sends a SETUP message (Called party number, Call association, Bearer identifier present).

**L3BC\_01\_02**

Ensure that the IUT, to request the addition of a bearer to a Multiconnection call, sends a SETUP message (Called party number, Call association, Bearer identifier as received from the previous point of call/bearer co-ordination).

**Selection:** IUT is not a point of call/bearer co-ordination.

**5.2.1.2 Succeeding side****L3BC\_02\_01**

Ensure that the IUT, on receipt of a SETUP message (Call association, Bearer identifier present), accepts the message and continues normal call handling.

**L3BC\_02\_02**

Ensure that the IUT, on receipt of a SETUP message (Call association indicating an unrecognized call association value) sends a RELEASE COMPLETE message (Cause value = 101).

**5.2.1.3 Error handling****L3BC\_03\_01**

Ensure that the IUT, on receipt of a SETUP message (Call association information element missing), sends a RELEASE COMPLETE message (Cause value = 96).

**L3BC\_03\_02**

Ensure that the IUT, on receipt of a SETUP message (Bearer identifier information element missing), sends a RELEASE COMPLETE message (Cause value = 96).

**L3BC\_03\_03**

Ensure that the IUT, on receipt of a SETUP message (Call association information element with content error present, IE instruction field flag = IE instruction field not significant), sends a RELEASE COMPLETE message (Cause value = 100).

**L3BC\_03\_04**

Ensure that the IUT, on receipt of a SETUP message (Call association information element with content error present, IE instruction field flag = follow explicit instructions, IE action indicator = clear call), sends a RELEASE COMPLETE message (Cause value = 100).

**L3BC\_03\_05**

Ensure that the IUT, on receipt of a SETUP message (Call association information element with content error present, IE instruction field flag = follow explicit instructions, IE action indicator = discard message and report status), sends a STATUS message (Cause value = 100, call state value = 0).

**L3BC\_03\_06**

Ensure that the IUT, on receipt of a SETUP message (Call association information element with content error present, IE instruction field flag = follow explicit instructions, IE action indicator = discard message), sends no message.



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## 6 Compliance

An ATS which complies with this TSS&TP specification shall:

- a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;
- b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;
- c) use the same naming conventions for the test groups and test cases;
- d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;
- e) comply with ISO/IEC 9646-2 [4].

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

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## 7 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [4], shall be used by any organization claiming to provide a comprehensive testing service for user equipment claiming conformance to EN 302 093-1 [1].

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## Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

- ISO/IEC 9646-3 (1998): "Information Technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 3: The Tree and Tabular Combined Notation (TTCN)".

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## History

<b>Document history</b>		
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