



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.2964.1

(07/96)

SERIES Q: SWITCHING AND SIGNALLING

**Broadband ISDN – B-ISDN application protocols for
access signalling**

Digital Subscriber Signalling System No. 2: Basic Look-Ahead

ITU-T Recommendation Q.2964.1

(Previously CCITT Recommendation)

ITU-T Q-SERIES RECOMMENDATIONS
SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATION OF SIGNALLING SYSTEMS No. 4 AND No. 5	Q.120–Q.249
SPECIFICATIONS OF SIGNALLING SYSTEM No. 6	Q.250–Q.309
SPECIFICATIONS OF SIGNALLING SYSTEM R1	Q.310–Q.399
SPECIFICATIONS OF SIGNALLING SYSTEM R2	Q.400–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1999
BROADBAND ISDN	Q.2000–Q.2999
General aspects	Q.2000–Q.2099
ATM adaptation layer	Q.2100–Q.2199
Signalling network protocols	Q.2200–Q.2599
Common aspects of B-ISDN application protocols for access signalling and network signalling and interworking	Q.2600–Q.2699
B-ISDN application protocols of the network	Q.2700–Q.2899
B-ISDN application protocols for access signalling	Q.2900–Q.2999

For further details, please refer to ITU-T List of Recommendations.

ITU-T RECOMMENDATION Q.2964.1

DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 2: BASIC LOOK-AHEAD

Summary

This Recommendation defines the operation of the Digital Subscriber Signalling System No. 2 (DSS 2) for the handling of the Look-Ahead feature that may be supported, as a network option, prior to Basic call and connection control at the T_B or at the coincident S_B and T_B reference point of the User to Network Interface of the Broadband Integrated Services Digital Network (B-ISDN). The Look-Ahead feature defined in this Recommendation enables the network to check whether compatible user equipment are connected to a user-network interface and whether they are free or busy. This feature can be used prior to an incoming call offering at the user-network interface.

Source

ITU-T Recommendation Q.2964.1 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 9th of July 1996.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had/had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 1997

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

CONTENTS

	Page
1.1 Scope	1
1.2 References	1
1.3 Definitions	2
1.4 Abbreviations	2
1.5 Description	3
1.6 Operational requirements	3
1.6.1 Provision and withdrawal	3
1.6.2 Requirements on the originating network side	3
1.6.3 Requirements on the destination network side	3
1.7 Primitive definitions and state definitions	3
1.7.1 Primitive definitions	3
1.7.2 State definitions	3
1.8 Coding requirements	4
1.8.1 Operations and errors	4
1.8.2 Coding rules	6
1.9 Signalling procedures at the coincident S_B and T_B reference point	6
1.9.1 Normal operation	6
1.9.2 Exceptional procedures	7
1.10 Procedures for interworking with private B-ISDNs	7
1.10.1 Originating interface	7
1.10.2 Destination interface	8
1.11 Interactions with other networks	9
1.11.1 Interworking with N-ISDNs	9
1.11.2 Interworking with non-ISDNs	9
1.11.3 Interworking with frame relay	9
1.11.4 Interworking with PSPDNs	9
1.12 Parameter values (timers)	9
1.12.1 Timer at the coincident S_B and T_B reference point	9
1.12.2 Timer at the T_B reference point	10
1.13 Dynamic description (SDLs)	10
Annex A – Network look-ahead indication	13
A.1 Scope	13
A.2 Coding requirements	13

	Page
A.2.1 Messages	13
A.2.2 Information elements.....	13
A.3 Signalling procedures at the T _B reference point	14
A.3.1 Normal operations.....	14
A.3.2 Error handling procedures.....	15
Appendix I – Information flows	15

Recommendation Q.2964.1

DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 2: BASIC LOOK-AHEAD

(Geneva, 1996)

1.1 Scope

This Recommendation specifies the basic look-ahead protocol for the Broadband Integrated Services Digital Network (B-ISDN) at the T_B reference point or coincident S_B and T_B reference point (as defined in Recommendation I.413 [1]) for the Digital Subscriber Signalling System No. 2 (DSS 2) protocol.

This Recommendation does not specify the additional protocol requirements where the feature is provided to the user via a telecommunications network that is not a B-ISDN.

The basic look-ahead protocol allows provision of look-ahead between the incoming side of a network and the outgoing side of the same network. Decisions on whether to use basic look-ahead protocol are made at each incoming gateway exchange. A mechanism exists between networks (e.g. at the T_B reference point) to allow one network to indicate to another network that basic look-ahead is required.

This Recommendation is applicable to equipments, supporting the look-ahead feature, to be attached at either side of a T_B reference point or coincident S_B and T_B reference point when used as an access to the public B-ISDN.

1.2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent addition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation I.413 (1993), *B-ISDN user-network interface*.
- [2] ITU-T Recommendation Q.2932.1 (1996), *Digital Subscriber Signalling System No. 2 (DSS 2) – Generic functional protocol: Core functions*.
- [3] CCITT Recommendation X.219 (1988), *Remote operations – Model, notation and service definition*.
- [4] CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*.
- [5] ITU-T Recommendation Q.2931 (1995), *Digital Subscriber Signalling System No. 2 (DSS 2) – User-Network Interface (UNI) layer 3 specification for basic call/connection control*.
- [6] ITU-T Recommendation Z.100 (1993), *CCITT Specification and description language (SDL)*.
- [7] ITU-T Recommendation Q.2961.1 (1995), *Additional signalling capabilities to support traffic parameters for the tagging option and the sustainable cell rate parameter set*.
- [8] ITU-T Recommendation Q.2724.1 (1996), *B-ISDN User Part – Look-ahead without state change for the Network Node Interface*.

1.3 Definitions

This Recommendation defines the following terms:

1.3.1 invoke component: See Recommendation Q.2932.1 [2], for the application of this component as defined in Recommendation X.219 [3]. Where reference is made to "xxxx" invoke component, an invoke component is meant with its operation value set to the value of the operation "xxxx".

1.3.2 network: The DSS 2 protocol entity at the network side of the user-network interface.

1.3.3 reject component: See Recommendation Q.2932.1 [2], for the application of this component as defined in Recommendation X.219 [3].

1.3.4 return error component: See Recommendation Q.2932.1 [2], for the application of this component as defined in Recommendation X.219 [3]. Where reference is made to "xxxx" return error component, a return error component is meant which is related to an "xxxx" invoke component.

1.3.5 return result component: See Recommendation Q.2932.1 [2], for the application of this component as defined in Recommendation X.219 [3]. Where reference is made to "xxxx" return result component, a return result component is meant which is related to an "xxxx" invoke component.

1.3.6 user: The DSS 2 protocol entity at the user side of the user-network interface.

1.3.7 availability check: Procedure to check whether the indicated capabilities are available at that moment.

1.3.8 compatibility information: Information according to Recommendation Q.2931 [5].

1.3.9 compatibility check: Procedure according to Recommendation Q.2931 [5].

1.4 Abbreviations

This Recommendation uses the following abbreviations.

ASN.1	Abstract Syntax Notation One
B-ISDN	Broadband Integrated Services Digital Network
CS-2	Capability Set 2
DSS 2	Digital Subscriber Signalling System No. 2
FIE	Facility Information Element
ISDN	Integrated Services Digital Network
NNI	Network-Network Interface
OLEX	Originating Local Exchange
PDU	Protocol Data Unit
ROSE	Remote Operations Service Element
SAAL	Signalling ATM Adaptation Layer
TLEX	Terminating Local Exchange
UNI	User-Network Interface