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Volume 2

Bell Communications Research Specification of Signalling System Number 7

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If further information regarding technical content is required, please contact:

District Manager, ISDN Architecture Planning
Network Transport Architecture Planning
Bell Communications Research, Inc.
Box 7020
331 Newman Springs Rd.
Red Bank, NJ 07701-7020

For general information, please contact:

District Manager, Information Exchange Management
Bell Communications Research, Inc.
445 South Street, Room 2K122
Box 1910
Morristown, NJ 07960-1910

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Bellcore does not recommend products, and nothing contained herein is intended as recommendation of any product to anyone.

If further information regarding technical content is required, please contact:

District Manager, G.G. Schlanger
SPC Network Architecture
Bell Communications Research, Inc.
290 W. Mt. Pleasant Ave., Room 1E-206
Livingston, NJ 07039-2729

For general information, please contact:

District Manager, Information Exchange Management
Bell Communications Research, Inc.
435 South Street, Room 2K122
Morristown, NJ 07960-1961

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FOREWORD

"Bell Communications Research Specification of Signalling System No. 7" is intended to be compatible with the "American National Standard Specification of Signalling System No. 7" that is being drafted by the T1X1.1 Working Group on U.S. Standards for Common Channel Signalling. This document uses (as far as possible) the same terminology, annotation rules and technical information as the T1 draft, yet it is being issued ahead of the official ANSI standard because it supplies timely information necessary for Bell Operating Company applications.

An asterisk (*) in the right margin signals a change from the 1984 CCITT protocol for U.S. network use, and a vertical bar in the margin indicates changes in subsequent issues. The following abbreviations are employed throughout:

CCITT SS#7 or SS#7 = International Signalling System No. 7, and SS7 = the T1 version of Signalling System No. 7.

This document is largely congruent with SS7 which is, in turn, based on and compatible with the 1984 Red Book specification of SS#7 issued for international use by CCITT Study Group XI (Vol. VI, Fascicle VI.7). The objectives for CCITT SS#7 implementation in U.S. networks exceed basic circuit switched call control signalling and place major emphasis on advanced capability support, such as: Integrated Services Digital Network (ISDN) signalling, Operations Administration and Maintenance (OA&M) applications, Transaction Capabilities, and others yet undefined. National versions of the 1984 Red Book Telephone User Part (TUP) and Data User Part (DUP) are not included and will not be supported, rather, descriptions of additional protocol capabilities and new applications are provided. Subsequent information on new applications will appear as detailed definition proceeds within CCITT and the ECSA T1 body.

The CCITT document has been modified by the T1X1.1 Working Group for use within and between U.S. networks to meet the anticipated needs and applications of those entities. These modifications - which coincide with current and projected CCITT activity — assume two general categories: (1) the specification of options designated by the CCITT for national use; and (2) addenda to the 1984 protocol providing for new applications of the SS#7 protocol. Although the T1 specification is a U.S. standard published by ANSI, several Canadian entities participate in the Working Group to ensure compatibility with American standards.

Volume 1 of this issue covers the Transport parts of SS7, including the Message Transfer Part (MTP) and the connectionless features of the Signalling Connection Control Part (SCCP). Volume 2 covers the Application parts of SS7, including the ISDN User Part, and the Transaction Capabilities Application Part.

The contents of this document correspond to the Red Book specification and, when appropriate, use the same Q numbers and chapter titles. The following appear in the same order as the Red Book:

- Q701-Q708, MTP;
- Q711-Q714, SCCP (to provide an OSI network layer over the MTP);
- Q761-Q766, for ISDN call control; and
- Q791-Q795, for OA&M capability.

Chapters Q7T1 - Q7T4 supplement the Red Book and provide transaction capabilities that specify OSI compatible layers for appropriate applications (a subject for further study in CCITT). The Glossary and Abbreviations amend those in the Red Book, and the Annotation section details the rules used to indicate diversions from the Red Book.

Future additions to this document - e.g., protocol evolution, new applications and operational requirements - will be considered by Bell Communications Research based on the interests of the Bell Operating Companies, and based on the work of the ANSI T1 Committee, which will promote compatibility among U.S. networks. Such additions will be incorporated with due attention to CCITT layered model principles, conventions and boundaries.