

AM TR-NIS-000068

AMERITECH ISDN INTERFACE

The ISDN Interface Specification document is being reissued to update the standard National ISDN-2 (NI-2) Basic Rate Access (BRA) and Primary Rate Interface (PRI) documentation references. This includes the introduction of National ISDN enhancements.

Bellcore, CPE Community and CPE End Users¹

December 1, 1993 Issue 4, August 1998 Until Canceled or Superseded

N/A See Sections 3 Through 5 of This Document
N/A Network, Service Integration & Delivery
INFOTECH Ameritech Network Services

Points of Contact:

Bob Laitman, 2000 W. Ameritech Center Drive, (847) 248-5268

Sue Perillo, 2000 W. Ameritech Center Drive, (847) 248-5329

Ameritech Team Data Support Center, 1-800-TEAM-DATA

Author(s):

Sue Perillo

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

Table of Contents

6.1. INTERFACE DOCUMENTATION

ix

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

ii

TECHNICAL REFERENCE NOTICE

This Technical Reference is published by Ameritech to provide an update of the standard National ISDN-2 (NI-2) Basic Rate Access (BRA) and Primary Rate Interface (PRI) documentation references. This includes the introduction of National ISDN enhancements.

Ameritech reserves the right to revise this document for any reason including, but not limited to, conformity with standards promulgated by various agencies, utilization of advances in the state of the technical arts, or the reflection of changes in the design of any equipment, techniques or procedures described or referred to herein.

AMERITECH MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE SUFFICIENCY, ACCURACY, OR UTILITY OF ANY INFORMATION OR OPINION CONTAINED HEREIN. AMERITECH EXPRESSLY ADVISES THAT ANY USE OF OR RELIANCE UPON THIS TECHNICAL REFERENCE IS AT THE RISK OF THE USER AND THAT AMERITECH SHALL NOT BE LIABLE FOR ANY DAMAGE OR INJURY INCURRED BY ANY PERSON ARISING OUT OF THE SUFFICIENCY, ACCURACY, OR UTILITY OF ANY INFORMATION OR OPINION CONTAINED HEREIN.

This document is not to be construed as a suggestion to any manufacturer to modify or change any of its products, nor does this document represent any commitment by Ameritech, to purchase any product whether or not it provides the described characteristics.

Ameritech does not recommend products, and nothing contained herein is intended as a commendation of any product to anyone.

Nothing contained herein shall be construed as conferring by implication, estoppel, or otherwise any license or right under any patent, whether or not the use of any information herein necessarily employs an invention of any existing or later issued patent.

Ameritech reserves the right not to offer any or all of these services and to withdraw any or all of them at any future time.

With respect to services offered pursuant to tariff, however, the terms and conditions of the service offering are determined by the tariff itself and applicable laws and regulations.

ORDERING INFORMATION

Network Employees:

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

Your first source of technical documentation is the on-line collections at intranet web site <http://apex.sbc.com>, which is accessible with the SBC standard web browser (i.e., Internet Explorer)

Many docs at this site are available immediately--they can be printed right at your desktop. If it isn't necessary to have the entire doc, print only what you need to do your work and toss the paper when finished. On-line document collections are updated often, to ensure you use the most current information always go to the on-line document when you need information.

However, if specific emergency documents are needed in paper or CD format AND this expense is authorized by your Area Manager (or above), submit **Form SBC18000N to the APEX Network Documentation Center (NDC)** or call the NDC on 517-788-6872.

Form SBC1800N is found at the "Forms Management" intranet web site: <http://forms.sbc.com>.

Select E-FORMS: Category: NETWORK ->Sub-Category: GENERAL FORMS

Click on: SBC18000N-Document Order Form

E-Forms First Time Users--you must download OmniForm Filler software by going to home page <http://forms.sbc.com> and click on the 'Get OmniForm Filler' button (last item on left sidebar) to download. Follow the menus to install this SBC approved software.

IMPORTANT--orders will not be processed without the proper RC/ARC (cost center) details AND an Area Manager's approval signature.

Non-Network Employees:

If you are a not a 272 *affiliate* employee you can place one-time orders using your corporate credit card by submitting Form SBC18000N as indicated above

272 *affiliate* employees should order directly from Telcordia at the number listed below. *Be sure to tell the order rep that you are a NON-NETWORK SBC employee to receive the corporate discount rates.*

Telcordia Customer Service

(732) 699-5828

60 New England Avenue, Room 1B252

Piscataway, NJ 08854-4196

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

8:00 AM to 4:30 PM EST

Credit Card Orders Only

External On-Line Access for Customers:

Vendors and other customers who require this public access document will find it at internet address: http://www1.ameritech.com/corporate/regulatory/network_page.html

Copyright © 1993-1998 by **Ameritech Corporation**

All Rights Reserved

This document cannot be reproduced without
the express permission of Ameritech.

Any reproduction without authorization is an
infringement of Ameritech copyright.

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

GENERAL

The ISDN Interface Specification document is being reissued to update the standard National ISDN-2 (NI-2) Basic Rate Access (BRA) and Primary Rate Interface (PRI) documentation references. This includes the introduction of National ISDN enhancements.

1. INTRODUCTION/REASON FOR REISSUE

These interface specifications are being reissued to update the Standard National ISDN Basic Rate Access (BRA) and Primary Rate Interface (PRI) Bellcore and Vendor technical interface documentation. The National documentation provides details on generic protocol and Customer Premises Equipment (CPE) functionality necessary to be compatible with National ISDN deployed in the 1998 time frame.

2. SERVICE DESCRIPTION

Ameritech offers Integrated Services Digital Network (ISDN) served by the Lucent 5ESS, Northern Telecom DMS-100 or Siemens EWSD digital switches. ISDN will be available on specific digital switches equipped with the proper software and hardware. Availability of ISDN in a given office can be confirmed by calling the Ameritech Team Data Support Center at 1-800-TEAM-DATA.

The ISDN Basic Rate Access Interface provides three bi-directional, symmetric digital channels from the Ameritech serving Central Office to the customer premises using a two-wire Digital Subscriber Line (DSL). Two of the channels are referred to as "B" channels, where each supports a 64 kbps information flow in each direction. The third channel is referred to as the "D" channel, supporting 16 kbps of signaling and user information flow in each direction. The "D" channel has a message-oriented protocol that supports call control signaling and packet data. The ISDN Basic Access provides for "2B+D," two "B" channels and one "D" channel providing for 144 kbps of user information in each direction. The ISDN Basic Rate Interface (BRI) will support circuit switched voice, circuit switched data, and packet switched data services.

The ISDN Primary Rate Interface consists of DS1 time division multiplexed signals provided on an appropriate facility. Each DS1 facility allows 24 bi-directional, symmetric digital channels from the Ameritech serving Central Office to the customer premises. The Primary Rate Interface includes a "D" channel that supports 64 kbps of signaling and user information flow in each direction. The remaining 23 channels on the Primary Rate Interface are referred to as "B" channels. Each "B" channel supports 64 kbps of information flow in each direction. Thus,

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

a typical ISDN Primary Rate Interface, consisting of a single DS1, is configured as a "23B+D" interface: 23 "B" channels and one "D" channel providing for 1.536 Mbps of user information in each direction. The ISDN Primary Rate Interface will support circuit switched voice, circuit switched data, and packet switched data.

ISDN Primary Rate also can provide for the service offering known as Switched DS1/Switched Fractional DS1, also known by many other industry names. This PRI feature allows for the user to establish and clear calls at N times 64 kbps rates, where N ranges from 2 through 24.

Technical reference information that is specific to a particular vendor, including feature descriptions and detailed specifications, is provided below.

3. NATIONAL ISDN-1 DEFINITION

National ISDN-1 provides a standard Network/Customer Premises Equipment (CPE) BRA interface. This allows terminal portability and a platform to offer standard services and features. The NI-1 services and features are documented in the Bellcore document SR-NWT-001937, National ISDN-1. The standard BRA interface protocol and call control procedures described in SR-NWT-001937 were derived from the Bellcore document TR-NWT-000268, ISDN Access Call Control and Signaling Requirements. The vendor's interface documentation provides the detail call control, interface specifications, and feature description of their NI-1 compliance.

4. NATIONAL ISDN-2 DEFINITION

National ISDN-2 builds upon the work in NI-1 with the intent to further progress toward the goals of National ISDN. The NI-2 services and features are documented in the Bellcore document SR-NWT-002120, National ISDN -2. Updates to the NI-1 BRA document TR-NWT-000268 are defined to support NI-2 BRA. The standard PRI protocol and call control procedures are documented in the Bellcore document TR-NWT-001268, ISDN Primary Rate Interface Call Control Switching and Signaling Generic Requirements for Class II equipment and call-by-call service selection features in TA-NWT-001270.

As a complement to the standard Primary Rate Interface, Bellcore introduced TR-NWT-001203, Generic Requirements for the Switched DS1/Switched Fractional DS1 Service for an ISDN interface. This enhancement allows the user to establish and clear calls to and from a PRI.

The vendor's interface documentation provides the detail call control, interface specification and feature description of their implementation of custom, NI-1 and NI-2 offerings.

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

5. NATIONAL ISDN 98 (NI-98)

National ISDN 98 (NI-98) is a compilation of National ISDN features and capabilities which will be made available from at least two of the National ISDN switch suppliers in the 1998 time frame. The NI-98 features and capabilities are described in the Bellcore document SR-3875, National ISDN 1995, 1996, 1997 and 1998.

Bellcore has also compiled SR-4287, 1998 National ISDN PRI Terminal Equipment Guidelines, and SR-4288, 1998 National ISDN BRI Terminal Equipment Guidelines, which provide generic guidelines to allow ISDN user access to the network provided call control and services for National ISDN through 1998 (NI-98).

The vendor's interface documentation provides the detail call control, interface specification and feature description of their implementation.

6. DOCUMENTATION

6.1. INTERFACE DOCUMENTATION

6.1.1. BELLCORE DOCUMENTATION

For technical information that is specific to the ISDN Physical Layer (Layer 1) of the service, the following Bellcore documentation is available.

TR-NWT-000393	ISDN Basic Access Digital Subscriber Lines
TR-NWT-000397	ISDN Basic Access Transport System Requirements
TR-TSY-000754	ISDN Primary Rate Transport System Requirements

The following Bellcore document describes the ISDN Data Link Layer (Layer 2) of the service:

TR-TSY-000793	ISDN D-Channel Exchange Access Signaling and Requirements
---------------	---

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

The following Bellcore document provides the technical basis for the NI-1 BRA Network Layer (Layer 3), call control and signaling requirements:

TR-TSY-000268	ISDN Access Call Control and Signaling Requirements
---------------	---

Bellcore has compiled a document that provides for designing customer premises equipment compatible with NI-2 BRA:

SR-4288	1998 Version of National ISDN Basic Rate Interface Terminal Equipment Generic Guidelines
---------	--

The following Bellcore documents provide the technical basis for the NI-2 PRI Network Layer (Layer 3), call control and signaling requirements:

TR-NWT-001268	ISDN Primary Rate Interface Call Control Switching and Signaling Requirements for Class II Equipment
TR-NWT-001203	Generic requirements for the Switched DS1/Switched Fractional DS1 Service Capability from an ISDN Interface
TA-NWT-001270	Call-by-Call Service Selection

Bellcore has compiled a document that provides guidelines for designing customer premises equipment compatible with NI-2 PRI and a document that provides NI-2 services and feature definitions:

SR-4287	1998 Version of National ISDN Primary Rate Interface Customer Premises Equipment Generic Guidelines
SR-NWT-002120	National ISDN-2

For information on the National ISDN feature set and capabilities, available by two or more ISDN switch suppliers in 1998, the following Bellcore document is available:

SR-3875	National ISDN 1995, 1996, 1997 and 1998
---------	---

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

6.1.2. SWITCH VENDOR-SPECIFIC DOCUMENTATION

Lucent 5ESS Publications

Custom Basic Rate Interface	235-900-343
Standard Basic Rate Interface	235-900-341
Primary Rate Interface	235-900-342

Northern Telecom DMS-100 Publications

Basic Rate Interface	NIS-S-208-6
Custom Primary Rate Interface	NIS-A-211-1
Standard Primary Rate Interface	NIS-A-233-1

Siemens EWSD Publications

Basic Rate Interface	0740-00010/00040
Standard Primary Rate Interface	0750-00010/00050
Custom Primary Rate Interface	0750-0A111

7. ORDERING INFORMATION

To order Bellcore documents, contact:

Bellcore

Customer Service

60 New England Avenue, Room 1B252

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.

Piscataway, NJ 08854-4196

1-800-521-CORE

(908) 699-5800

To order vendor-specific documents, contact:

Ameritech

ATTN.: Information manager

2000 West Ameritech Center Drive, 3A43E

Hoffman Estates, IL 60196-1025

AMERITECH EMPLOYEES CONTACT YOUR LOCAL TIRM REPRESENTATIVE!!!!

Copyright © SBC Service, Inc. 2000

This document is protected by the U.S. Copyright laws. Any alteration to its text, contents, or presentation format is an infringement of SBC's Copyright rights.