



SIN 302

Issue 2.0

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Suppliers' Information Note

For The BT Network

BT Internet Protocol Transport Services Service Description

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1 Introduction

This Suppliers Information Note (SIN) gives information about BT's Internet Protocol (IP) Transport Services. Following Oftel's decision to treat basic data services, including IP services, as "network services" from 1 April 1998, BT's IP Transport Services will be provided from the Systems Business (SB) from that date.

2 Contact Information

If you have inquiries relating to this document, then please contact: help@sinet.bt.com

3 Service Outline

The IP Transport Service Systems Business will comprise Internet and UK IP VPN (Virtual Private Network) service offerings with dial, fixed and gateway accesses.

Fixed connections to these IP services will be delivered using one of the following interfaces:

- IEEE 802.3 (Ethernet) at 10Mbit/s, 100Mbit/s and 1000Mbit/s
- IEEE 802.5 (Token Ring) - withdrawn from new supply 16/5/2001
- FDDI - withdrawn from new supply 16/5/2001
- X.21 (Frame Relay encapsulation)
- E1 G.703/G.704 (Frame Relay encapsulation)
- E3 G.703 (ATM encapsulation)
- STM-1 (ATM encapsulation)

In addition to the above direct connection options the following BT data services provide a gateway to access the IP Transport Service:

- ATM (Cellstream)
- Frame Relay
- SMDS

In addition to the above fixed and gateway connections access to the IP Transport Service is available via the following dial-up options:

- ISDN 64kbit/s, or 128kbit/s where 2 B channels can be bonded using PPP bonding as specified in RFC 1990.
- PSTN access via modem, at rates up to and including the emerging 56kbit/s standard.

A simplified representation of the network configuration is shown in Figure 1 and the relevant standards are listed in section 4.

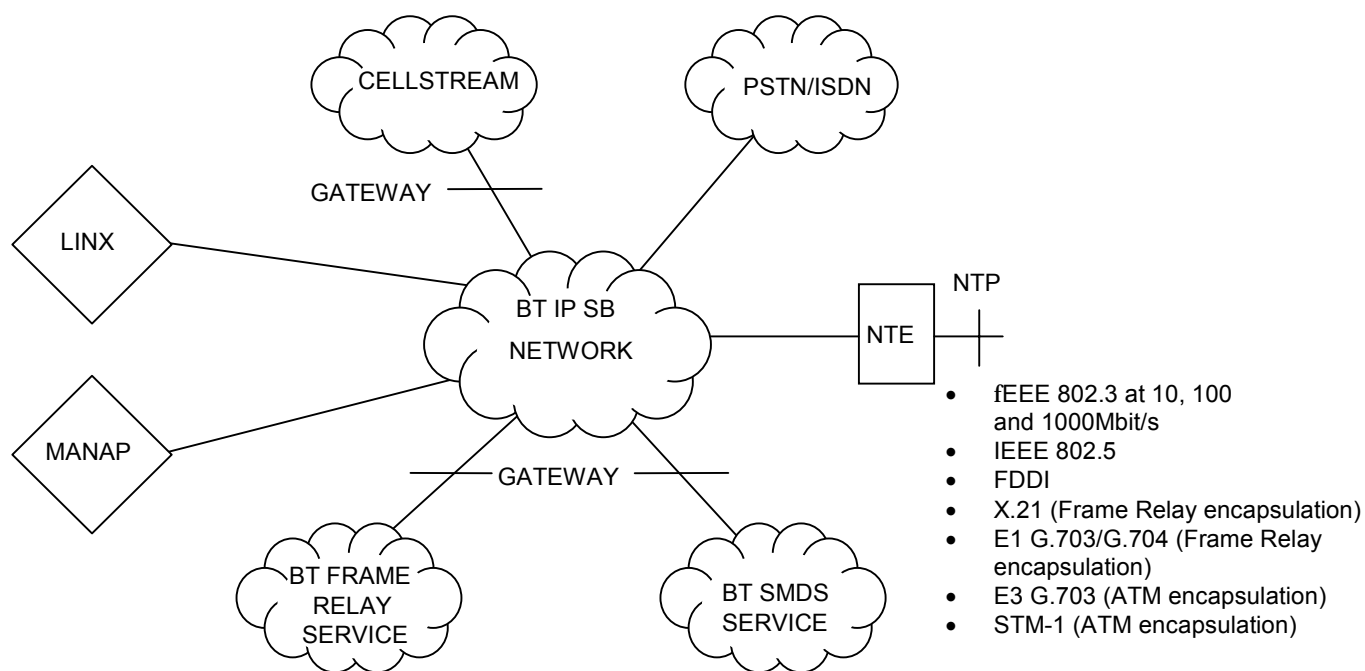


Figure 1 General Network Overview

(LINX and MANAP are Internet Exchanges in London and Manchester respectively.)

Further information for the interfaces shown in Figure 1 can be found as follows:

- IEEE 802.3 - see SIN 360 for Gigabit Ethernet.
- ISDN - see SINs 171, 232, 261.

- Cellstream - see SIN 264.
- Frame Relay - see SIN 291.
- SMDS - see SIN 240.
- For IEEE 802.5 - see SIN 161.
- For FDDI - see SINS 233, 234.
- X.21 (Frame Relay encapsulation) - see section 4.
- E1 G.703/G.704 (Frame Relay encapsulation) - see section 4.
- E3 G.703 (ATM encapsulation) - see section 4.
- STM-1 (ATM encapsulation) - see section 4.

The SINS are available from www.sinet.bt.com

4 Interface Specifications

The following specifications apply generally to all of the services:

RFC 791	Internet Protocol: DARPA Internet Program Protocol, 1981
RFC 1034	Domain Name Service - Concept & Facilities (standard)
RFC 1035	Domain Name Service - Implementation & Specification (standard)
RFC 826	ARP: An Ethernet Address Resolution Protocol (standard).

The following specifications apply to fixed connections delivered via a LAN presentation:

RFC 1042	A standard for the transmission of IP Datagrams over IEEE 802 networks (standard).
IEEE 802.3	IEEE standards for Local Area Networks : CSMA/CD Access Method. 10BaseT, 100BaseT and 1000BaseT interfaces will be supported.
IEEE-802.5	IEEE standards for Local Area Networks : Token Ring Access Method and Physical Layer specification. The physical interface is a DB9 connection.
RFC 1390	Transmission of IP and ARP over FDDI networks (standard).
ISO 9314-2	Fibre Distributed Data Interface (FDDI) - Media Access Control.
ISO 9314-1	Fibre Distributed Data Interface (FDDI) - Token Ring Physical Layer Protocol.
ISO 9314-3	Fibre Distributed Data Interface (FDDI) - Physical Layer, Medium Dependent.
ANSI X3T9.5/84-49 Rev7.1	FDDI Station Management (ISO 9314-6 - waiting approval)

The following specifications apply to fixed connections delivered via an X.21 (Frame Relay encapsulation) interface:

ITU-T Recommendation X.21, "Interface between Data Terminal Equipment and Data Circuit-terminating Equipment for synchronous operation on public data networks", September 1992
ITU-T Recommendation X.27, "Electrical characteristics for double-current interchange circuits operating at data signalling rates over 10 Mbit/s", October 1996
ISO 4903 15 Pole DTE/DCE Interface Connector and Contact Number Assignments, 1989
Frame Relay Forum implementation agreement 1.2, "User-to-Network Interface (UNI) Implementation Agreement", April 2000
ITU-T Recommendation I.2.33, "Frame Mode Bearer Services", March 1993
IETF RFC 2427, "Multiprotocol Interconnect over Frame Relay", September 1998
ITU-T Q.933 Annex A, "Digital subscriber signalling system No.1 (DSS 1) – Signalling specifications for frame mode switched and permanent virtual connection control and status monitoring", October 1995

The following specifications apply to fixed connections delivered via an E1 G.703/G.704 (Frame Relay encapsulation) interface:

ITU-T Recommendation G.703, "Physical/electrical characteristics of hierarchical digital interfaces", October 1998
ITU-T Recommendation G.704, "Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44736 kbit/s hierarchical levels", October 1998
BNC connector complying with Figure 2 of BS 9210 N0001:Part2:1982
Frame Relay Forum implementation agreement 1.2, "User-to-Network Interface (UNI) Implementation Agreement", April 2000
ITU-T Recommendation I.2.33, "Frame Mode Bearer Services", March 1993
IETF RFC 2427, "Multiprotocol Interconnect over Frame Relay", September 1998
ITU-T Q.933 Annex A, "Digital subscriber signalling system No.1 (DSS 1) – Signalling specifications for frame mode switched and permanent virtual connection control and status monitoring", October 1995

The following specifications apply to fixed connections delivered via an E3 G.703 (ATM encapsulation) interface:

ITU-T Recommendation G.703, "Physical/electrical characteristics of hierarchical digital interfaces", October 1998
ITU-T Recommendation G.804, "ATM Cell Mapping into Plesiochronous Digital Hierarchy (PDH)", November 1993
ITU-T Recommendation G.832, "Transport of SDH elements on PDH networks: Frame and multiplexing structures", November 1993
BNC connector complying with Figure 2 of BS 9210 N0001:Part2:1982
User-Network Interface (UNI) Specification version 3.1. The ATM Forum Technical Committee, September 1994
ITU-T Recommendation I.361 – B-ISDN ATM layer specification, November 1995
ITU-T Recommendation I. 610 – B-ISDN Operations and Maintenance Principles and Functions, November 1995

The following specifications apply to fixed connections delivered via an STM-1 (ATM encapsulation) interface:

ITU-T Recommendation G.707, "Network node interface for the Synchronous Digital Hierarchy (SDH)", March 1996
ITU-T Recommendation G.957, "Optical interfaces for equipment's and systems relating to the synchronous digital hierarchy", July 1995
BS EN 60825-1:1994 Safety of Laser Products Part 1 Equipment classification
BS EN 60825-1:1995 Safety of Laser Products Part 2 Safety of Optical fibre communications systems
ITU-T Recommendation G.652 - Characteristics of a single-mode optical fibre cable, March 1993
ITU-T Recommendation I.432.2 - B-ISDN user network interface - Physical layer specification for 155 520kbit/s and 622 080kbit/s 1996
BS EN 186110:1994. Sectional Specification. Connector sets for optical fibre cables Type FC.
User-Network Interface (UNI) Specification version 3.1. The ATM Forum Technical Committee, September 1994
ITU-T Recommendation I.361 – B-ISDN ATM layer specification, November 1995
ITU-T Recommendation I. 610 – B-ISDN Operations and Maintenance Principles and Functions, November 1995

The following specifications apply to dial up access:

RFC 1661	Point to Point Protocol (standard)
RFC 1994	PPP Challenge Handshake Authentication Protocol (CHAP) (draft)
RFC 1990	PPP Multilink Protocol (draft)

The following specifications apply to the fixed end of IP transport services using dial access for the purposes of end-user authentication:

RFC 2138	Remote Authentication Dial In Service (RADIUS) (proposed)
RFC 2139	RADIUS Accounting (informational)

The following specifications apply to data services gateways:

RFC 1209	The transmission of IP Datagrams over the SMDS service (standard)
RFC 1490	Multiprotocol Interconnect over Frame Relay (draft)
RFC 1483	Multiprotocol Encapsulation over ATM Adaptation Layer 5 (proposed)

The following routing protocols will be supported over the above interfaces in the applications indicated in the table below:

RFC 1058	RIP: Routing Information Protocol (historic)	Dial access VPN services to interface into the host site
RFC 1583	OSPF Version 2 (draft)	Dial access VPN services to interface into the host site
RFC 1771	BGP4: Border Gateway Protocol 4 (draft)	Internet

For further information or copies of referenced sources, please see document sources at <http://www.sinet.bt.com/usenum.htm#docsources>

5 History

Issue 1	20 March 1998	First Issue
Issue 1.1	October 2000	Editorial changes
Issue 1.2	11 December 2000	Addition of 1000BaseT and reference to SIN 325
Issue 2.0	5 June 2003	Addition of the following interfaces and associated specifications: <ul style="list-style-type: none">• X.21 (Frame Relay encapsulation)• E1 G.703/G.704 (Frame Relay encapsulation)• E3 G.703 (ATM encapsulation)• STM-1 (ATM encapsulation) Reference to SIN 325 for Terminal Approval requirements deleted.

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