SIN 133

Issue 5.0
December 2008

Suppliers' Information Note

For The BT Network

The BT Cardway Service

SERVICE DESCRIPTION

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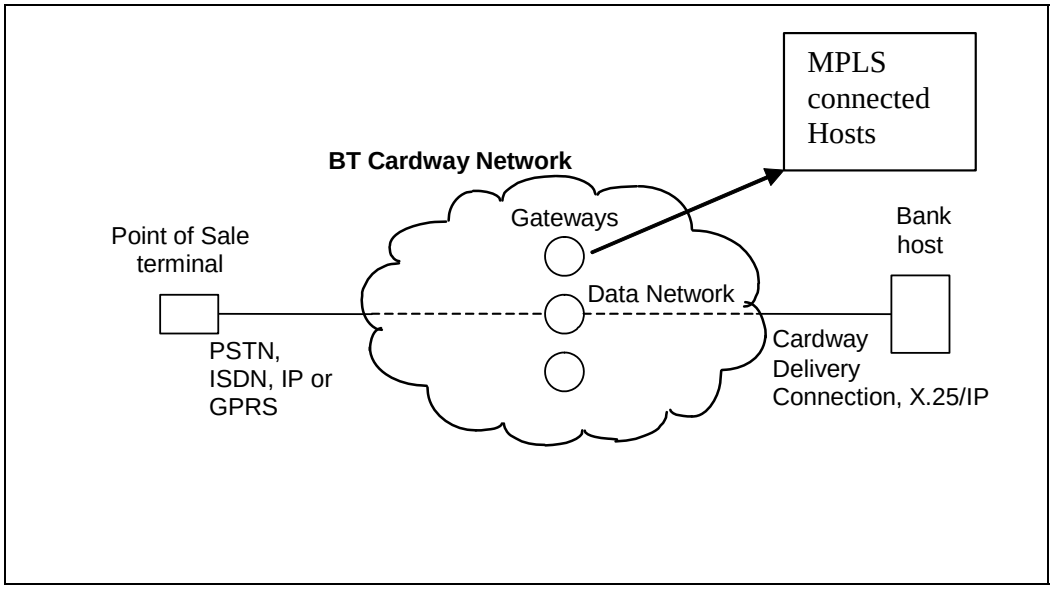
1. Introduction

This Suppliers' Information Note (SIN) describes the BT Cardway service. The service offers a means of accessing card company hosts in order to obtain automatic authorisation for credit card transactions.

2. Description of the BT Cardway service

2.1 General

The BT Cardway service provides a means of data communication between terminals connected via PSTN, ISDN, IP or GPRS technologiess and a central host computer connected via a Cardway Delivery Connection. Connection can also be established via the BT MPLS network, providing IP connectivity both into and out from the Cardway network. The use of MPLS provides the ability to carry out translations from X25 to IP and IP to X25. BR+T Cardway can also offer the same services globally. The principal application is the authorisation of credit card transactions in retail stores along with Visa II ATMs. The network is optimised for the real time transmission of short transaction messages. A typical Cardway call may have a duration of between 5 and 15 seconds and convey a few hundred bytes of data. The figure below shows how the service is used.



2.2 Call Set Up

Call set up via Cardway is a two-stage operation initiated by seizing the line and signalling the appropriate PSTN number. Upon connection, further signalling takes place using modem-to-modem communication or ISDN 64kb/sec data communication to select the required destination.

Alternatively calls can be received/originated at a Customer Cardway gateway node via the BT MPLS network. This caters for IP connectivity for customers that require this type of service.

Calls can also be sent from GPRS terminals through a private APN and into the Cardwy network.

2.3 Data Transfer

Following call set up, data may be transferred across the PSTN network using modem-to-modem communication or ISDN 64kb/sec data communication. Calls can also be sent via GPRS and IP technologies. Customers can also use point to point circuits such as X25 and IP. It should also be noted that data can be sent as X25 protocol over IP if required.

2.4 Call Clearance

On completion of data transfer, the calling terminal releases the PSTN connection.

3. Technical Specification

The network supports terminals using a number of different access methods. BT uses the codes t3, t24, t24+, x and i to identify PSTN/ISDN interfaces. The technical characteristics of each are shown in the table below. The terminal must dial the appropriate PSTN number for the access method used.

Access method	Access	Modem standard	Protocol
t3	PSTN	V.21	APACS30/40
t24	PSTN	V.22 bis	APACS30/40
t24+	PSTN	V.22 bis	APACS30/40 *
x	PSTN	V.22 bis, V.42 LAPM	X.28 #
i	ISDN	n/a	X.25
Note 1	GSM	V110	APACS30/40
MPLS	IP	N/A	IP, XOT, bin2, 3 and 4

V.21, V.22 bis, V110, V.42, X.25 and X.28 are recommendations published by the International Telecommunications Union (ITU-T). APACS30 and APACS40 are standards are published by the Association for Payment Clearing Services.

* The t24+ service uses a modified form of the APACS30 and APACS40 standards where the maximum size of each data block is increased from 128 to 2048 bytes. All other protocol features are unchanged.

The Visa II protocol, used by the current ATMs on Cardway, is transported using the X28 protocol.

The Cardway Delivery Connection uses the X.25 protocol via an interface as described in SIN 57 for the 64 kbit/s Kilostream X.21 interface or via MPLS. For MPLS connection compatible CPE will connect to an IP network which will allow an MPLS VPN to be established. The BT Cardway Network makes no assumptions as to the physical connectivity to the CPE, other than that it conveys an MPLS VPN over IPv4. Terminal designers would need to be able to design a compatible terminal with respect to appropriate RFCs/Standards.

Note 1. The GSM service is provided through dialup of the Cardway access number using mobile GSM transaction terminals.

4. Service Availability

For further information on service availability and tariffs, please contact:

Carl Dickinson, BT Cardway Business Director

Tel: 020 7876 8614 or E-Mail Carl.dickinson@bt.com

5. Abbreviations

APN	Access Point Name
ATM	Automatic Teller Machine
APACS	Association for Payment Clearing Services
GPRS	General Packet Radio Service
GSM	Global System for Mobile
IP	Internet Protocol
ISDN	Integrated Services Digital Network
LAPM	Link Access Protocol for Modems
MPLS	Multi Protocol Label Switching
PSTN	Public Switched Telephone Network
RFC	Request for Comment (IETF)
SIN	Suppliers Information Note
VPN	Virtual Private Network

6. References

ITU-T Recommendations

V.21	300 Bits Per Second Duplex Modem Standardized For Use In The General Switched Telephone Network
V.22 bis	2400 Bits Per Second Duplex Modem Using The Frequency Division Technique Standardized For Use On The General Switched Telephone Network And On Point-To-Point 2 Wire Leased Telephone-Type Circuits
V.42	Error-Correcting Procedures For DCEs Using Asynchronous-To – Synchronous Conversion
X.25	Interface Between Data Terminal Equipment (DTE) And Data Circuit-Terminating Equipment (DCE) For Terminals Operating In The Packet Mode And Connected To The Public Data Networks By Dedicated Circuit
X.28	DTE/DCE Interface For A Start-Stop Mode Data Terminal Equipment Accessing The Packet Assembly/Disassembly Facility (Pad) In A Public Data Network Situated In The Same Country
V110	V110 ISDN protocol technology, making use of the ISDN subset capabilities of GSM handsets
RFC 1613	Cisco Systems X.25 over TCP (XOT)
RFC 791	Internet Protocol

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SIN 57	BT KiloStream X.21 Interface, Service Description

Standards published by the Association for Payment Clearing Services:

APACS30	Specification For A Credit Authorisation Terminal
APACS40	Acquirers' Interface Requirements For Electronic Data Capture Terminals

IP related information

IP Bin header	A 2, 3 or 4 byte header that defines the IP packet length as a binary value.
XOT	X25 over TCP. Cisco related protocol catered for by the Cardway product line.
MPLS VPN	A customer VPN used as a secure path across the BT MPLS network

For information on where to obtain these referenced documents please see the document sources list at http://www.sinet.bt.com/docsources.htm.

7. History

Issue	Date	Changes
Issue 1	November 1988	First published.
Issue 2	December 1998	
Issue 2.1	June 2003	Format Updated. Section on Terminal Equipment Approvals removed. “Private circuit” replaced by “Cardway Delivery Connection” with interface defined by reference to SIN 57.
Issue 3.0	July 2004	GSM access added.
Issue 4.0	July 2006	IP/MPLS facility added
Issue 4.1	August 2007	Contact information amended in Clause 4, Service Availability
Issue 5.0	December 2008	Information on GPRS and IP connectivity now included

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