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**DIGITAL CHANNEL SERVICE  
(DCS)**

**TERMINAL-TO-NETWORK INTERFACE**

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**SUBJECT:** *DISCLOSURE NOTICE*

**REF. NO:** BCID0006  
**ISSUE NO:** 1  
**DATE:** March 1992

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**Disclosure Notice:**      **Digital Channel Service (DCS),  
Terminal-to-Network Interface**

**Date Commercial Service:** Planned to start in the second quarter of 1992.

**Description of Service:**

Digital Channel Service (DCS) is a dedicated end-to-end digital data service offered within specified serving areas on B.C. Tel's Digital Services Network (DSN). Until recently, Newbridge's proprietary 2B+D interface algorithm, which is ISDN-based, only provided a maximum loop reach of 2.2 km, and is subject to bridge taps for loop lengths greater than 1.1 km. Their new 2B1Q interface (only the D channel is proprietary) increases the loop reach to 4.6km (limited to 3.5 km in the presence of bridge taps).

The current DCS offering is being revised to allow the use of four-wire network interface. This change was filed with the CRTC on March 6, 1992, with a requested effective date of April 13, 1992. This allows B.C. Tel to provision DCS using non-ISDN based technologies, and reach more customers who require local digital access, via a general tariff service.

Data units at the customer's premises are required, and the customer may either rent or purchase the equipment. Where two-wire interface is used, the data unit is the Data Termination Unit (DTU); where four-wire interface is used, the data unit is the Data Service Unit (DSU).

**For Further Technical Information, contact:**

B.C. Telephone Compan  
Advanced Technology Standards  
10 - 3777 Kingsway  
Burnaby, B.C.  
V5H 3Z7  
(604) 432-4109

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**Description of Interface:**

**Two-Wire Interface:**

The Data Termination Unit (DTU) converts two data circuits of up to 64 kb/s to a higher speed signal which is transmitted on a two-wire twisted pair. Both synchronous (to 56 kb/s) and asynchronous (to 19.2 kb/s) channels are supported. The interface to the DTU on the network side is a modular jack. The DTU can be purchased with EIA (Electronic Industries Association) RS-232 to CCITT (Consultative Committee - International Telegraph and Telephone) V.35 electrical data interfaces.

The older version of the DTU (Newbridge 2600 series) is limited to 2.2 km; using the 2B1Q line card on the Newbridge 2700 series DTUs has increased the loop reach to 4.6 km.

The technical requirements may change from time to time as upgrades and enhancements to the two-wire interface are introduced. Detailed information about the current version of the two-wire interface can be obtained from:

Newbridge Networks Corporation  
Attention: Steve Robinson  
Suite 100, 5580 Explorer Drive  
Mississauga, Ontario L3W 4Y1  
(416) 238-5214

**Four-wire Interface**

The Data Service Unit (DSU) is standard equipment and is available from several manufacturers. Dataport and Amdahl technology are currently used in B.C. Tel; however, DSUs using the latter technology are "Manufacturer Discontinued."

The DSU loops terminate on OCU (Office Channel Unit) ports, or their functional equivalent. Detailed information on the DSU specifications are described in the AT&T Technical Reference 62310, "Digital Data System Channel Interface Specification" dated November 1989, and its Addenda, for all Standard Speeds except 19.2 kb/s synchronous.

The AT&T Technical Reference 62310 can be obtained from:

A T & T  
P.O.Box 19901  
Indianapolis, IN 46219,  
U.S.A.

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The 19.2 kb/s synchronous transmission characteristics of the DSU are described in the B.C. Tel Technical Reference, "Dataroute Network, Specifications for Digital Circuit Terminating Equipment" dated April 30, 1991, which can be obtained from:

B.C. Telephone Company  
Advanced Technology Standards  
10 - 3777 Kingsway  
Burnaby, B.C.  
V5H 3Z7  
(604) 432-4109

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