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## Macintosh: DQDB (Distributed Queue Dual Bus) and MANs

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### TOPIC -----

Is a card available for Macintosh computers to connect to Distributed Queue Dual Bus (DQDB) Metropolitan Area Networks (MANs)?

### DISCUSSION -----

A MAN data transport mechanism is the intended use of a Distributed Queue Dual Bus (DQDB), and DQDB MANs are meant to function as connectionless networks that link multi-megabit LANs together. Because of this, a Macintosh isn't a likely first candidate end-node device for design and manufacture of DQDB interface cards.

It's more likely that DQDB networks will connect to devices such as routers and bridges. Routers and bridges (interconnect devices) will be the first to have DQDB interfaces, and it may be a year or more before those come into real use. There have been some SMDS/DQDB trials, and Bell Atlantic is presently offering SMDS service to a limited area. Wide use of this technology is still several years away.

If you need to put your Macintosh computers on a MAN today, you can use a router to attach to the MAN and then a LAN (of your choice) to attach to the Macintosh end nodes. There may eventually be an SMDS/DQDB interface for the Macintosh when the service becomes a real commercial product.

Here's some background information on DQDB to help understand what it is.

### DQDB Background Information

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Metropolitan area networks (MANs) could offer answers to the demand for communications with anyone, anywhere, cheaply and reliably. The ideal

answer is a system that can support high speeds and geographical distances of hundreds of kilometers and be available for everyone.

FDDI is a popular backbone technology capable of high-speed communications and allows extended distances between networked sites. Presently FDDI is considered suitable for high-speed workstation networking.

The telephone industry supports a proposed MAN implementation called Queued Packet Synchronous eXchange (QPSX). The IEEE 802.6 committee changed the name to Distributed Queue Dual Bus (DQDB) in order to avoid confusion with an Australian company. MANs have implications that apply to corporate use and to the entertainment industry for advanced video and voice services.

The Distributed Queue Dual Bus (DQDB) standard was adopted as IEEE 802.6 in late 1990. DQDB describes a physical layer and Medium Access Control (MAC) sublayer to support packet and isochronous (time-sensitive) data transport over a metropolitan area. DQDB describes a transport network, not a MAN service.

Bellcore's description of a MAN service is SMDS. As currently specified, SMDS will provide the MAN service using DQDB as the underlying transport network. The first in a series of TAs defining the requirements for SMDS was released in October 1989. These documents include specifications for the user interface, service structures, network components, billing elements, and network management. SMDS TRs started to appear this year, and SMDS demonstrations, trials, industry groups, and related standards have also started to appear. SMDS will be very important in the RBOCs' future deployment plans for MANS, particularly as an initial step to offering Broadband ISDN (B-ISDN) services.

AT&T's competition comes from QPSX Systems of Perth, Australia, which backs Distributed Queue Dual Bus (DQDB). QPSX is a joint venture of Telecom Australia and the University of Western Australia, the developer of DQDB.

Communications industry analysts said there's little difference between AT&T's SMDS and QPSX Systems' DQDB beyond the initials. "SMDS is AT&T's implementation of DQDB," said Stuart Gavurin, a network analyst at Ernst & Young.

In 1987, IEEE decided to use DQDB as the basis for MANs, and a year later QPSX announced an agreement to allow AT&T to manufacture DQDB-compliant products. Shortly after that, however, AT&T decided to pursue its own implementation of MAN.

Gavurin said that the point for potential users to note is SMDS and DQDB adhere to the 802.6 standard and are compatible with each other. Users can buy products based on one implementation and know the products will work with those based on the other implementation.

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