SMDS (Switched Multi-megabit Data Services)

- Introduced in US by Bellcore 1989
- Adapted to Connectionless Broadband Data Service (CBDS) by ETSI.
- Trials in Europe 1993
- Wide area, packet data service
- Offered by the PTOs
- Designed to bridge gap between LAN and leased lines.
- Compliments ATM and FDDI
- Data rates from 1.5Mbit/s-34Mbit/s
- Data only service. Primary target - LAN interconnect

SMDS service

- Switched Service - no need to create virtual channels etc.
- Based on IEEE 802.6 MAN standard
  - 53 octet cells
  - E.164 addressing (international scheme)
- Supports Multicast
- Can implement popular protocols through its Subscriber Network Interface (SNI) eg. TCP/IP, Appletalk, DECnet etc
- Supports a set of operation, administration and maintenance functions for network management using a SNMP agent.

SMDS in more detail

- Variable length packets (to 9188 bytes)
- No virtual circuits - individually addressed SMDS packets.
- Segmentation And Reassembly performed for transport over ATM networks.
- whole (36 octet) SMDS header fits into one cell allowing pipelining.
- Pipelining - network can start forwarding cells before the whole packet has arrived.

SMDS Access Classes

- Average rate of transfer of user information known as Sustained Information Rate (SIR)

- Several SMDS access classes available providing the following SIR characteristics:
  - Class 1 = 4Mbit/s
  - Class 2 = 10Mbit/s
  - Class 3 = 16Mbit/s
  - Class 4 = 25Mbit/s

- Enforced using a “credit manager”

SMDS Comparison

- Leased Lines
  - fixed bandwidth
  - users must build their own network
- X.25
  - full error control and correction
  - usually 64kbit/s, 2Mbit/s fastest
- N-ISDN
  - 64kBit/s to 2Mbit/s, circuit switched
  - relatively long call setup
- Frame relay
  - connection oriented (virtual circuits)
  - wideband, not broadband
- ATM
  - ATM is a *technology* SMDS is a *service*
  - SMDS can be used over ATM