

**METHOD AND APPARATUS FOR CONTROLLING DATA FLOW
THROUGH AN ATM INTERFACE**

ABSTRACT OF THE DISCLOSURE

A method and network interface for controlling the flow of data between a and an ATM network is provided. The network interface resides on an ATM interface and includes a state machine for each channel supported by the ATM interface. The state
5 machine moves from state to state based on the contents of a local buffer, indications that data for the channel is ready to be transferred from the host computer to the local buffer, and the status of operations that transfer data for the channel from the host computer to the local buffer. The ATM interface includes a DMA unit and a segmentation unit that operate responsive to the states of the various state machines to
10 avoid inefficient transfer operations. Specifically, the DMA unit does not attempt to move data for a channel from the host computer to the local buffer if the state of the state machine for the channel indicates that (1) there is no more data in the host computer for the channel or (2) there is no more room in the local buffer to receive data for the channel from the host computer. The segmentation unit does not attempt
15 to transmit cells for a channel when the state of the state machine for the channel indicates that the local buffer does not contain enough data for the channel to construct a cell for the channel.