Virtual Circuit Switching:

Frame Relay

Virtual Circuit Switching

Global Addressing

Virtual Circuit Identifier

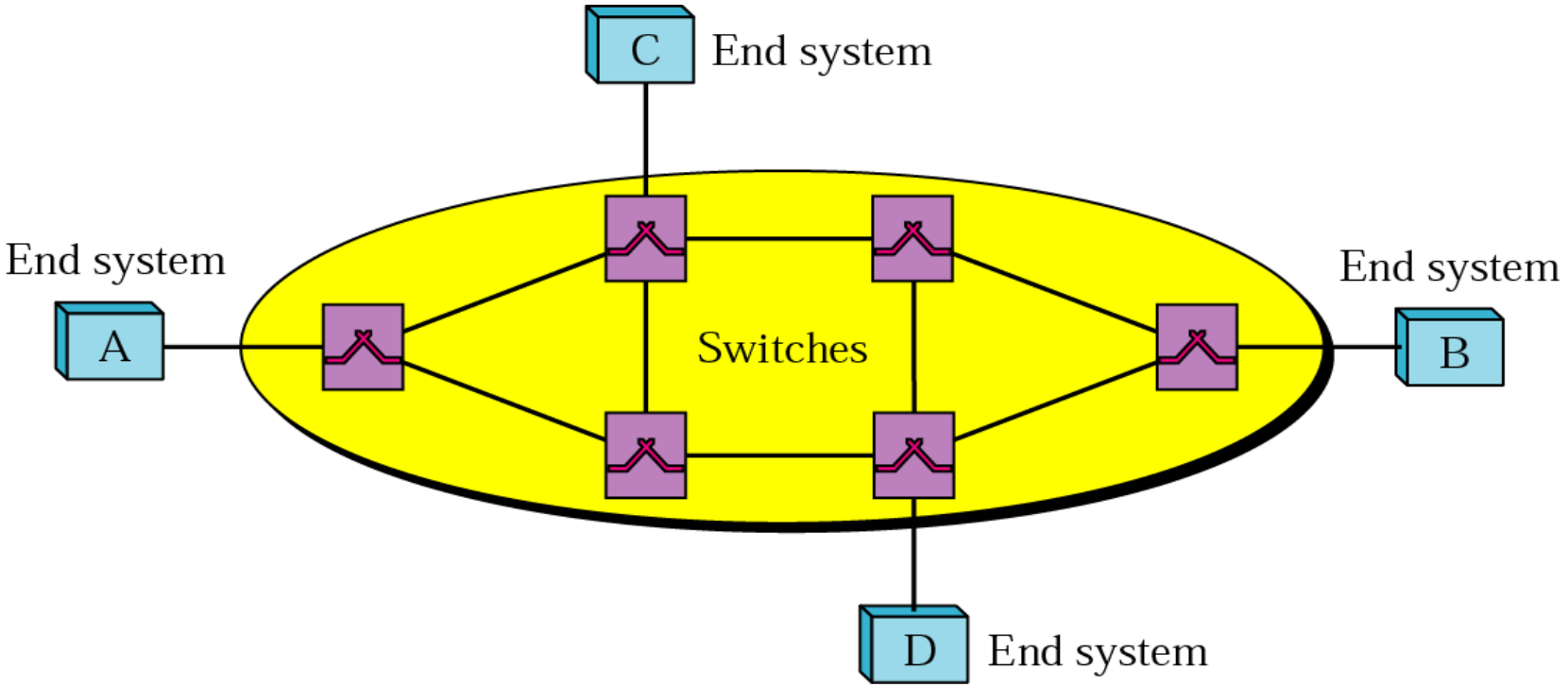
Three Phases

Data Transfer Phase

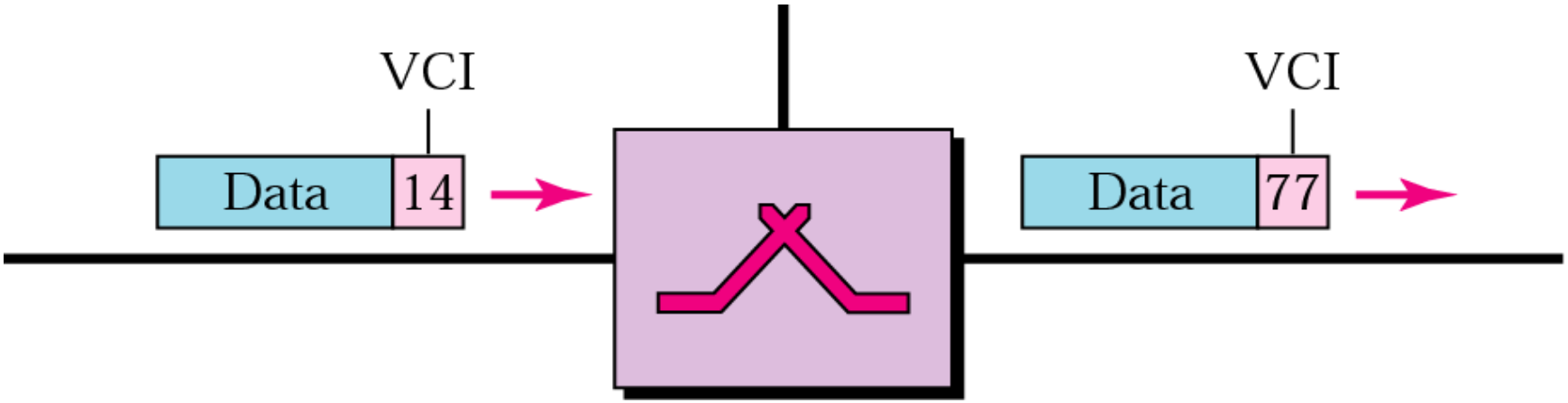
Setup Phase

Teardown Phase

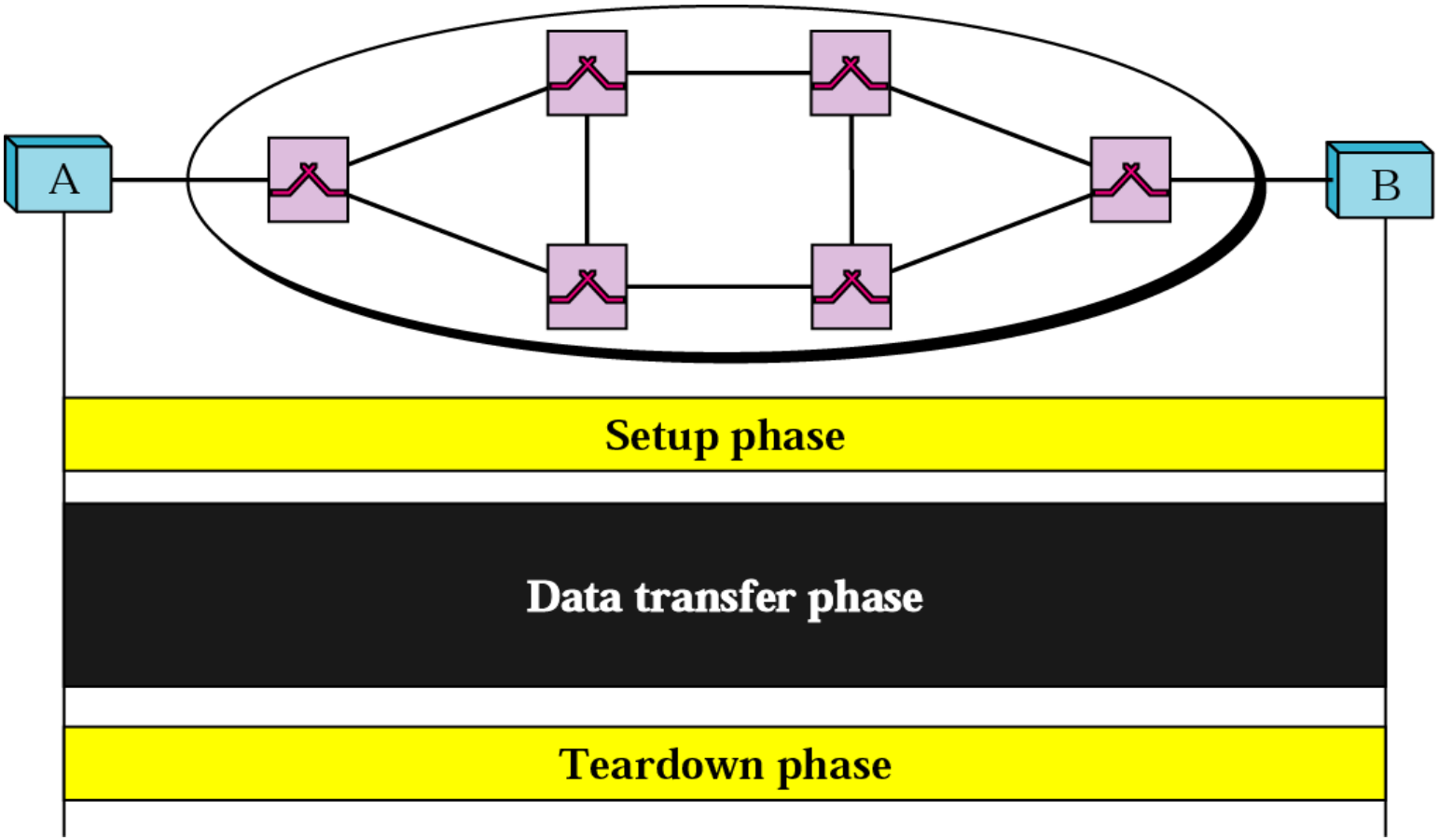
Virtual circuit wide area network



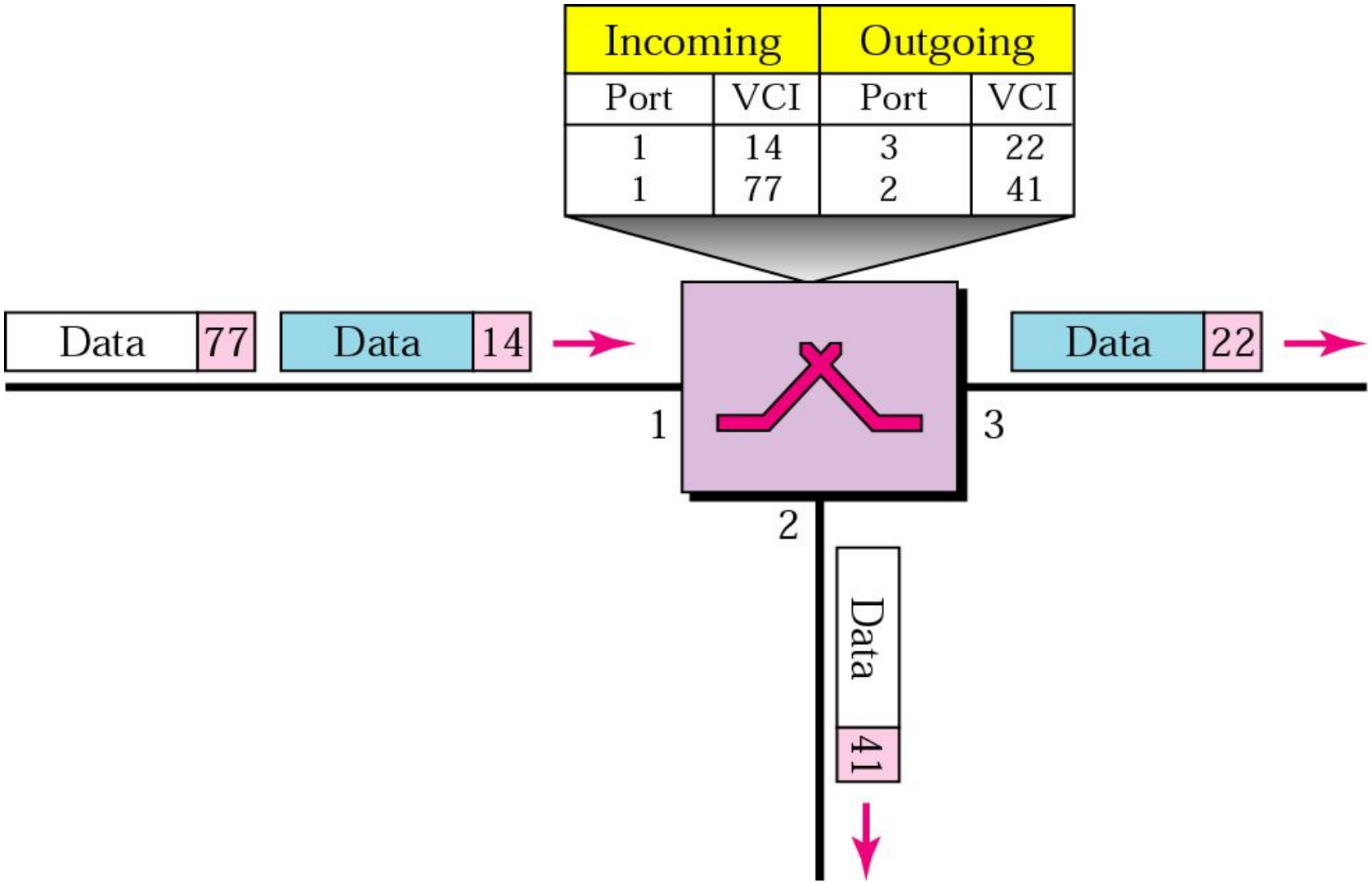
VCI - Virtual Circuit Identifier



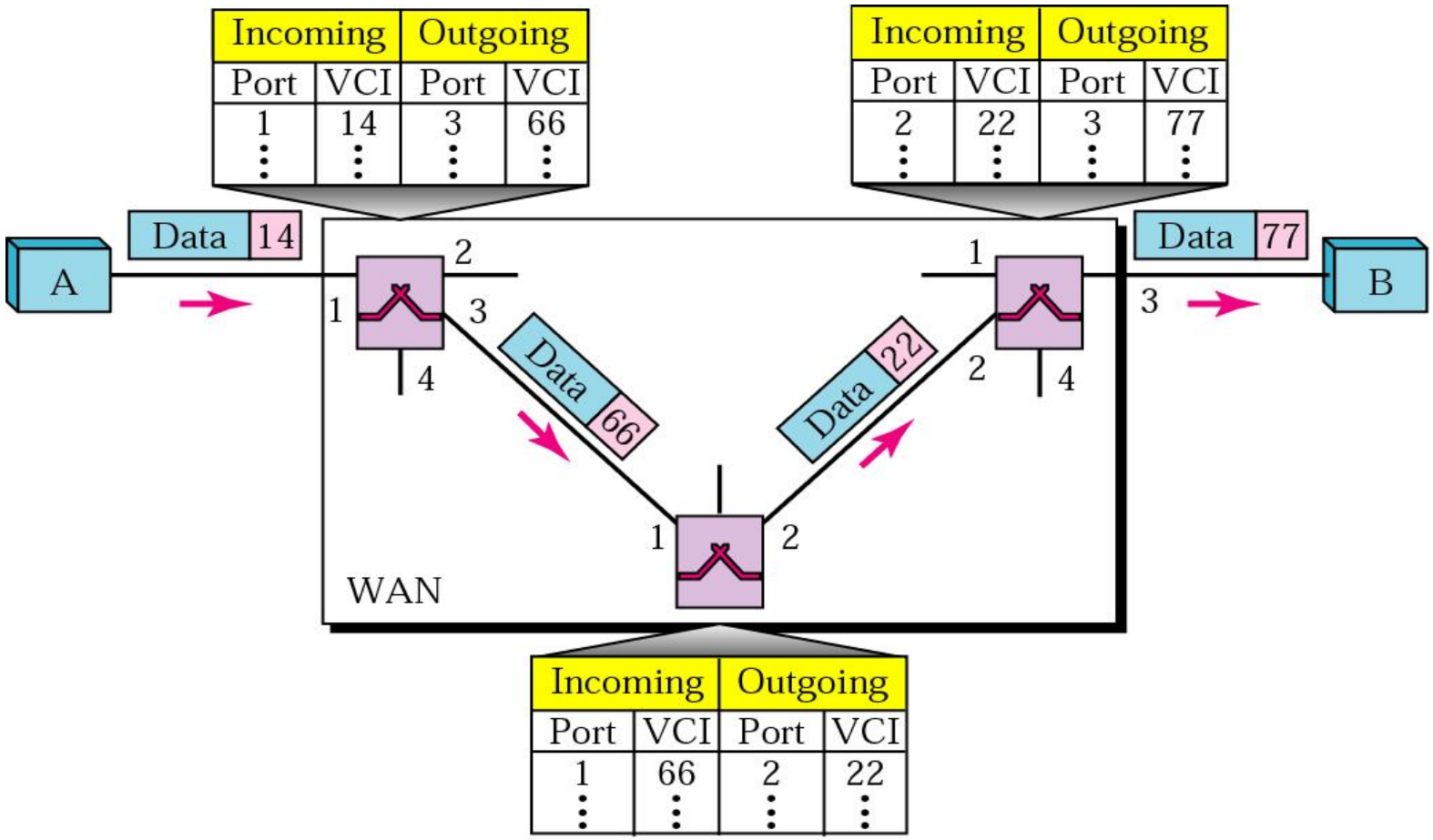
VCI phases



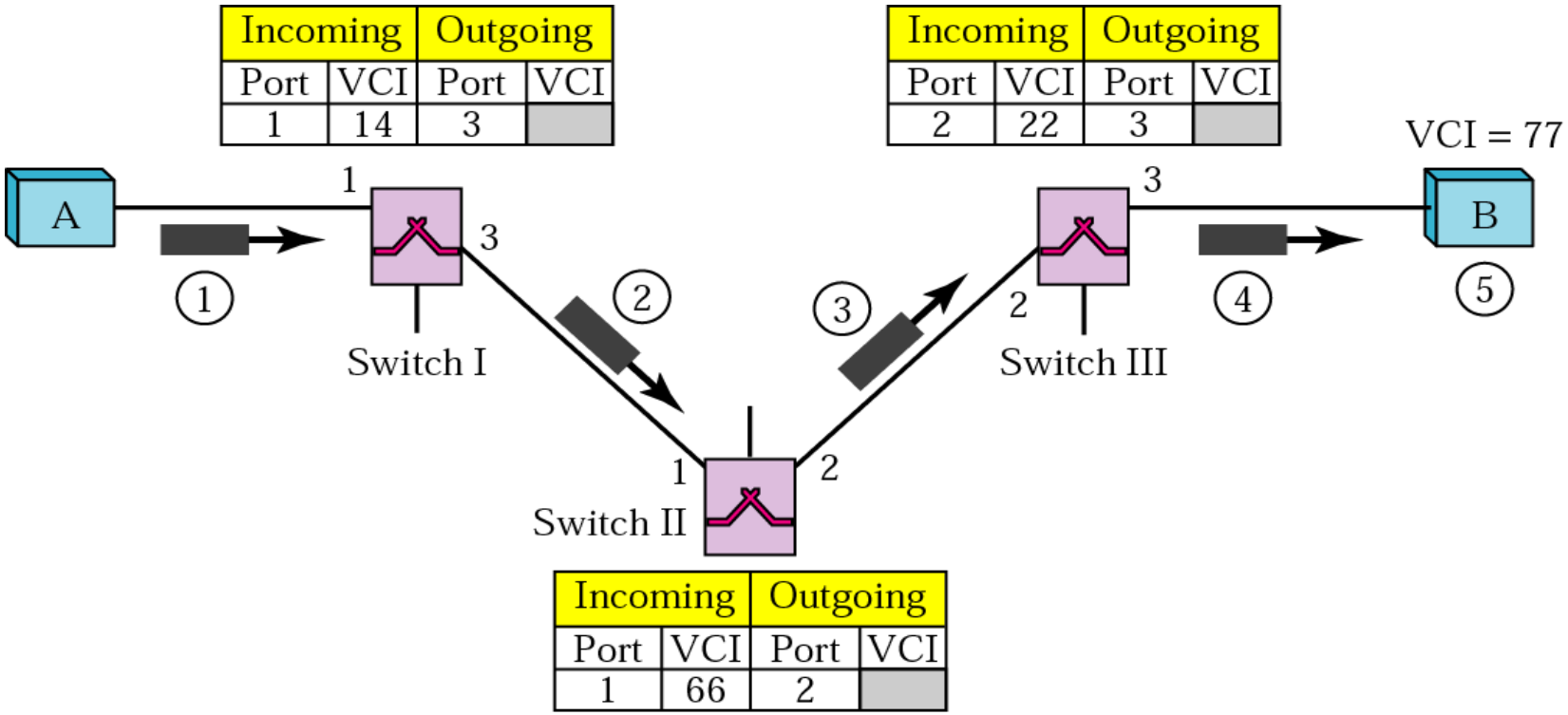
Switch and table



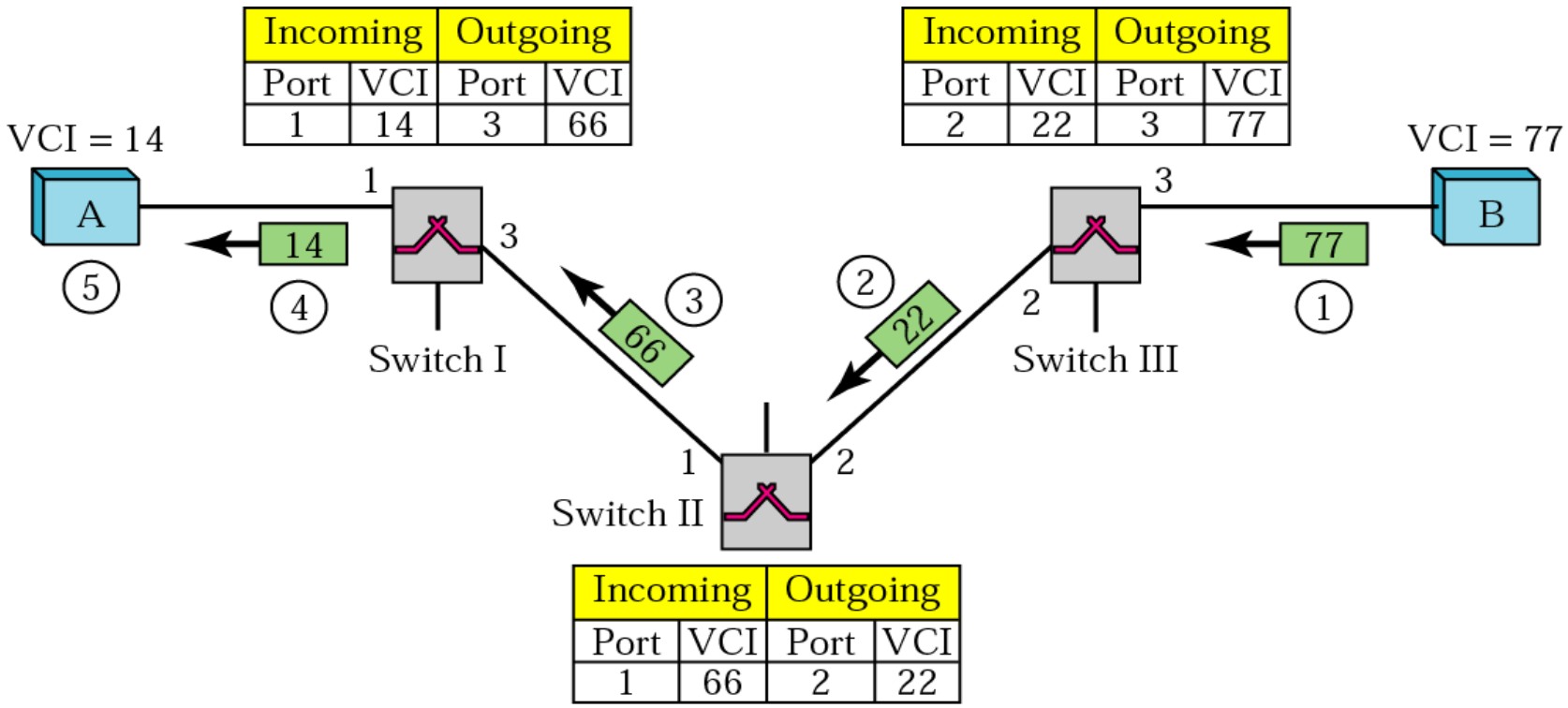
Source-to-destination data transfer



SVC (Switched Virtual Circuit) setup request



SVC setup acknowledgment



Frame Relay

Architecture

Frame Relay Layers

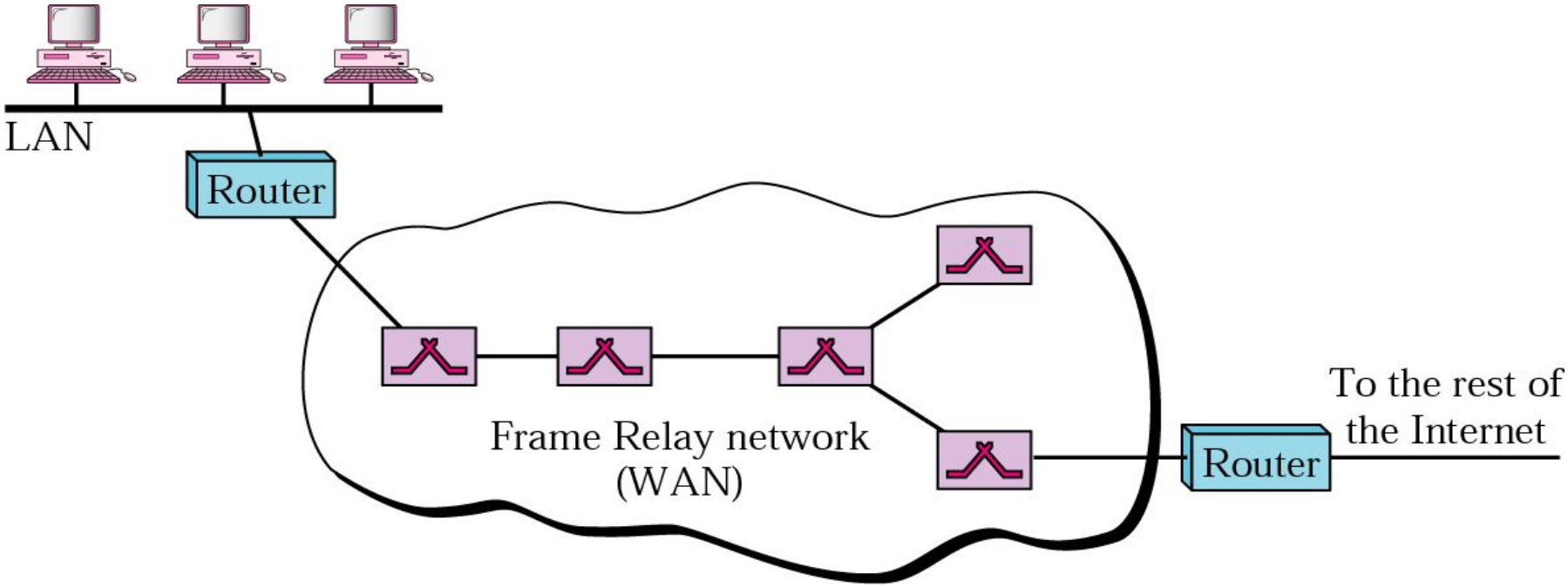
FRAD

VOFR

LMI

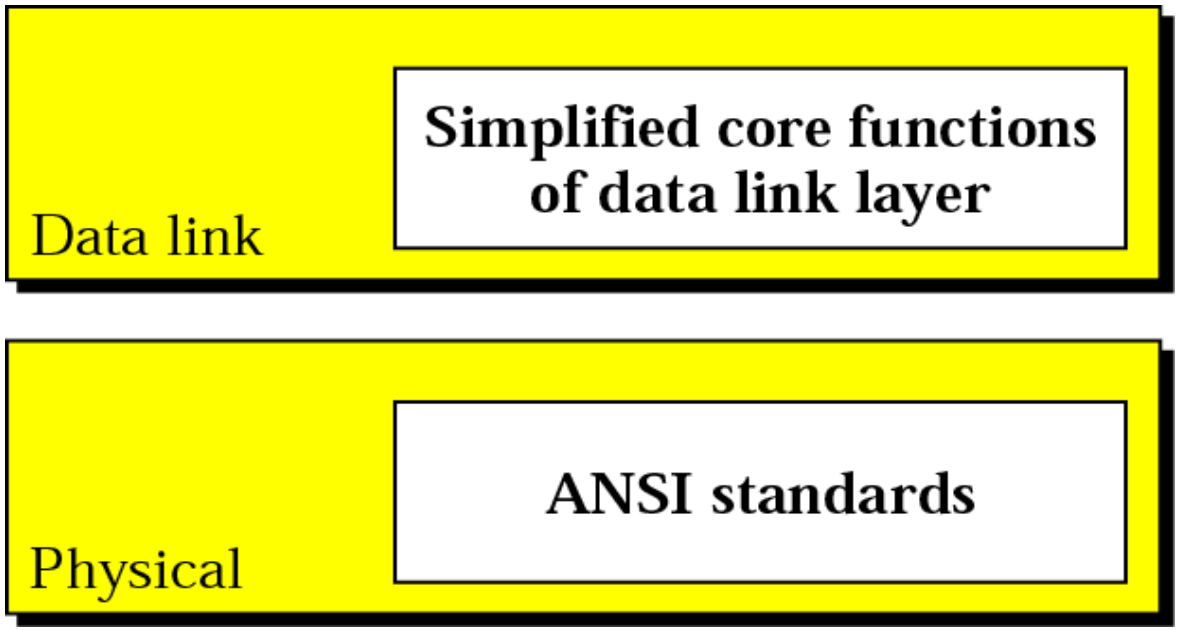
VCIs in Frame Relay are called DLCIs (Data Link Connection Identifier).

Frame Relay does not provide flow or error control; they must be provided by the upper-layer protocols.



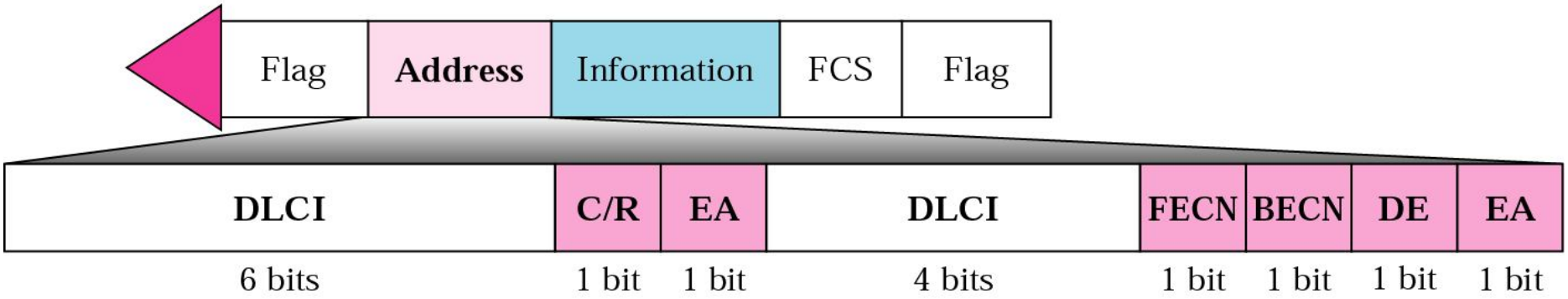
Frame Relay layers

Frame Relay operates only at the physical and data link layers.

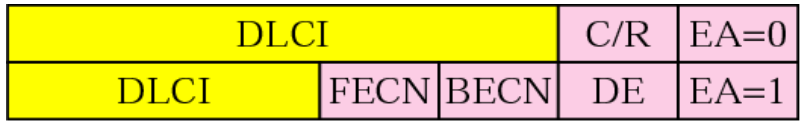


Frame Relay frame

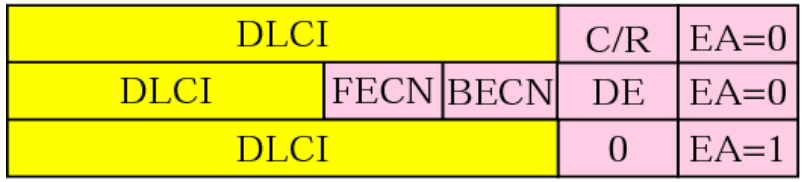
C/R: Command/response
EA: Extended address
FECN: Forward explicit congestion notification
BECN: Backward explicit congestion notification
DE: Discard eligibility
DLCI: Data link connection identifier



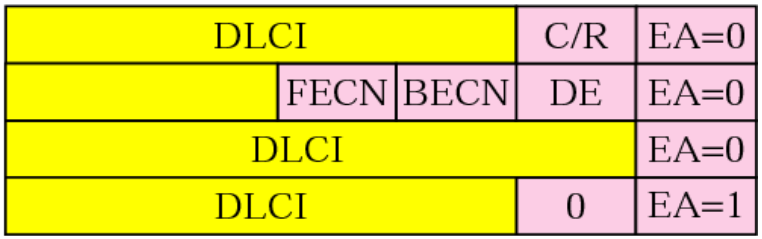
Three address formats



a. Two-byte address (10-bit DLCI)



b. Three-byte address (16-bit DLCI)



c. Four-byte address (23-bit DLCI)

FRAD Frame Relay Assembler/Disassembler