

# Lecture 24

## FRAME RELAY

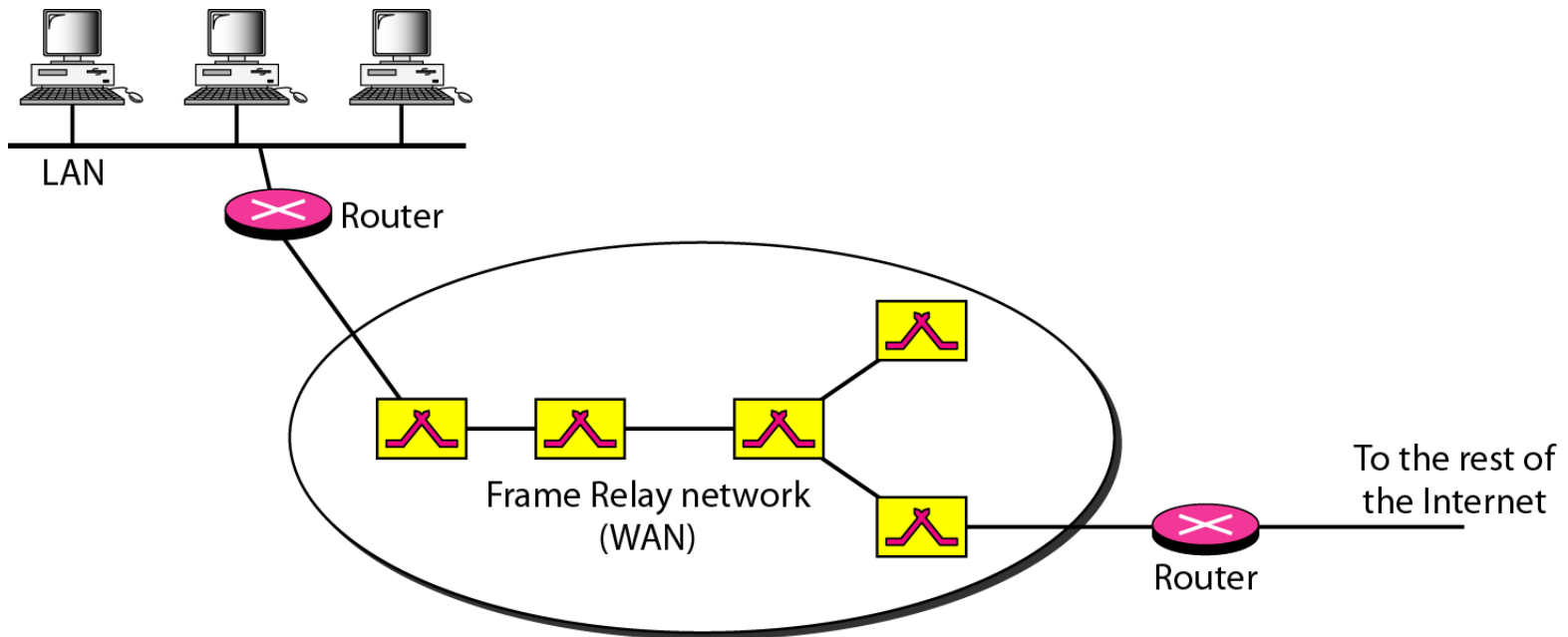
# Topics Covered

- FRAME RELAY
- Frame Relay network
- Frame Relay layers
- Frame Relay frame
- Applications

# FRAME RELAY

*Frame Relay is a virtual-circuit wide-area network that was designed in response to demands for a new type of WAN in the late 1980s and early 1990s.*

# Frame Relay network





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*Note*

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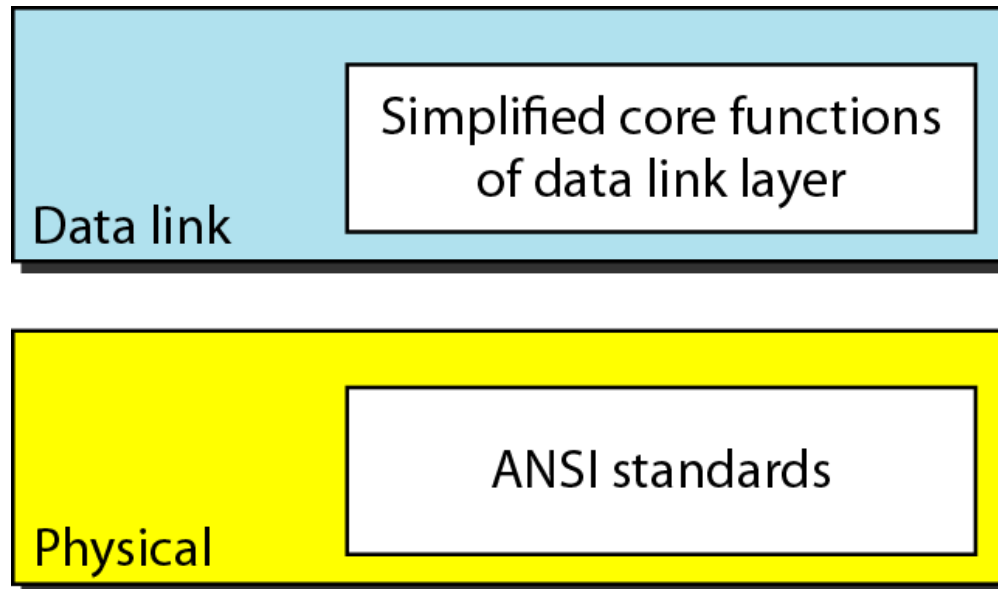
**VCI in Frame Relay are called DLCIs.**

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# Frame Relay layers

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*Note*

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

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# Frame Relay frame

C/R: Command/response

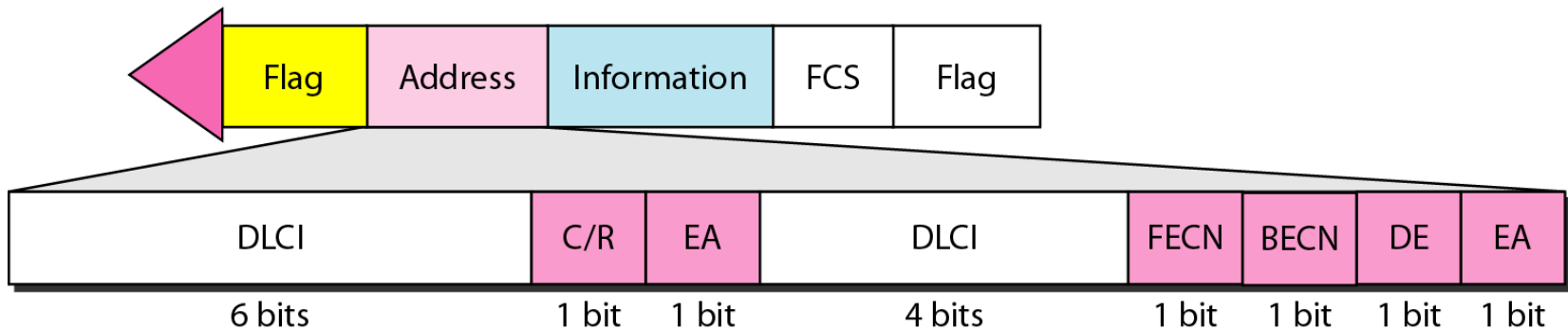
EA: Extended address

FECN: Forward explicit congestion notification

BECN: Backward explicit congestion notification

DE: Discard eligibility

DLCI: Data link connection identifier







*Note*

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

# Three address formats

DLCI			C/R	EA = 0
DLCI	FECN	BECN	DE	EA = 1

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

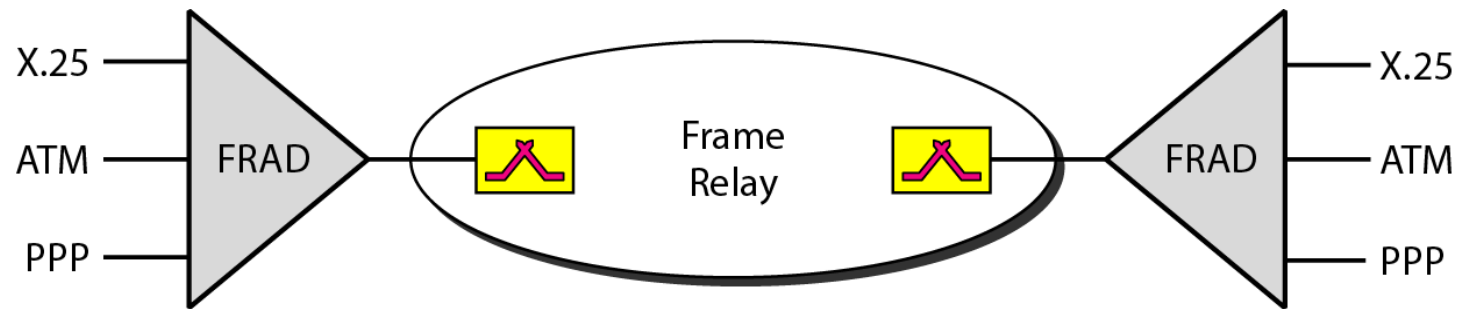
DLCI			C/R	EA = 0
DLCI	FECN	BECN	DE	EA = 0
DLCI			0	EA = 1

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

DLCI			C/R	EA = 0
DLCI	FECN	BECN	DE	EA = 0
DLCI				EA = 0
DLCI			0	EA = 1

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

# FRAD



# Applications

- Frame Relay is a standardized wide area network technology that specifies the physical and logical link layers of digital telecommunications channels using a packet switching methodology.
- Originally designed for transport across Integrated Services Digital Network (ISDN) infrastructure, it may be used today in the context of many other network interfaces.

# Applications

- Network providers commonly implement Frame Relay for voice (VoFR) and data as an encapsulation technique, used between local area networks (LANs) over a wide area network (WAN).
- Frame Relay has become one of the most extensively-used WAN protocols. It is less expensive than leased lines and that is one reason for its popularity. The extreme simplicity of configuring user equipment in a Frame Relay network offers another reason for Frame Relay's popularity.

# SCOPE OF RESEARCH

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- Multiprotocol interconnect over frame relay