

SEMINAR

Future Trends and Directions In Networking

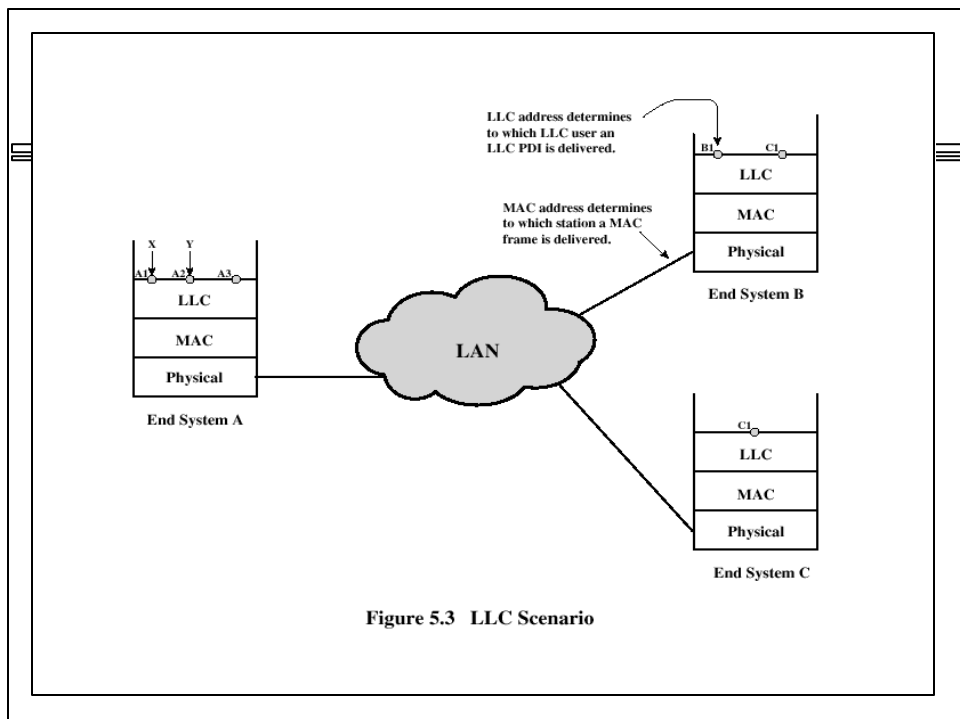
Speaker: ALCATEL representative

Date: Tuesday March 12, 2002

Time: 8:30-9:45AM

Place: Building 14-108

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Addressing

- **MAC address: Unique over the whole network**
 - » identifies the physical interface from station to the LAN
 - » One-to-one
 - » One-to-multiple (reliability)
 - » Multiple-to-multiple (bridge)
- **LLC address (LSAP): Unique only within a station**
 - » Associated with a particular user within a station
 - » Executing process
 - » Hardware port

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Addressing (Cont.)

- **Group (multicasting) address**
- **Broadcasting**
- **Dedicated LSAP addresses**

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MAC Sublayer

- **Objective:**
- **MAC Techniques:**
 - » Key parameters are *Where and How?*
- **Where?**
 - » *Centralized*
 - » *Distributed*
- **How?**
 - » **Topology**

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Centralized MAC Sublayer

- **A controller is responsible for granting access to the network**
- **A station wishing to transmit must wait for the permission**
- **Advantages:**
 - » Offers greater control over access
 - To provide priority, overrides and guaranteed capacity
 - » Relatively simple access logic
 - » Avoids distributed coordination among peer entities
- **Disadvantages:**
 - » Creates a single point of failure
 - » Acts as a bottleneck

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Distributed MAC Sublayer

- Stations collectively perform a MAC function to determine dynamically the order

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Synchronous Access Control

- A specific capacity is dedicated to a connection
- Examples:
 - » TDM
 - » FDM
- Not optimal in LAN as the needs of stations are not predictable

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Asynchronous Access Control

- **Objective: to dynamically assign access**
- **Round Robin:**
 - » A scheduling algorithm in which processes are activated in a fixed cyclic order
- **Reservation**
- **Contention**