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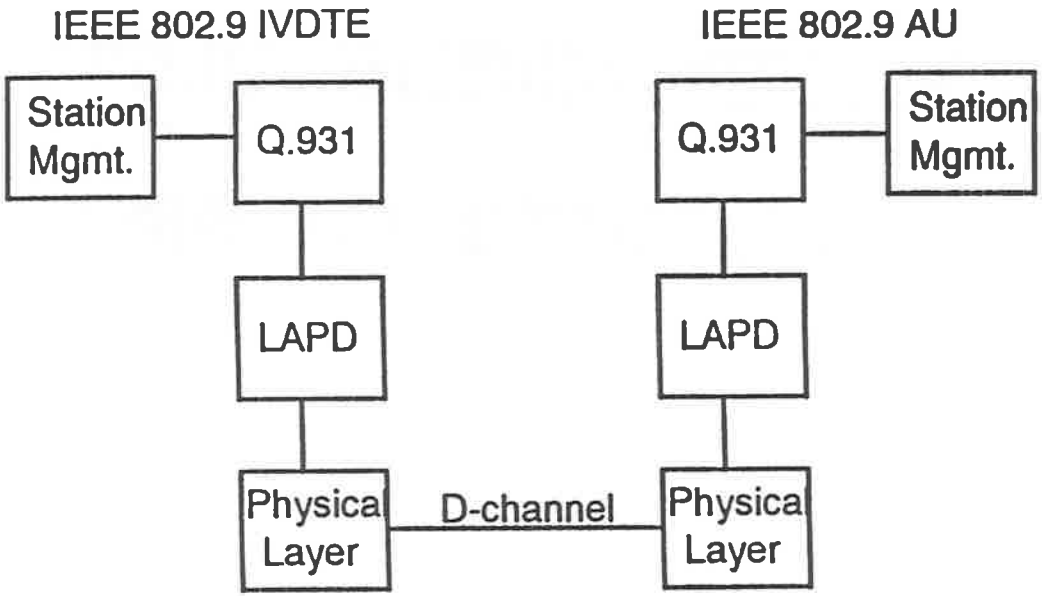
SIGNALLING FOR IEEE802.9

CIRCUIT SWITCHED SERVICES

Q.931 D-channel Signalling Protocol Stack

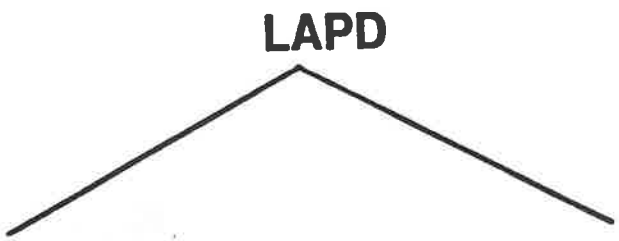


Link Access Procedure - D channel (LAPD)

- LAPD (Layer 2) is used to convey information between peer Layer 3 entities over a D-channel.

Functions provided by LAPD

- Multiple Data Link connections
- Frame delimiting, alignment, and transparency
- Sequence Control
- Error Detection
- Error Recovery
- Flow Control



Unacknowledged Operation

**(No Error Recovery,
No Flow Control)**

Acknowledged Operation

**(Error Recovery,
Flow Control provided)**

- **Use Acknowledged Operation Mode**

Q.931 ???

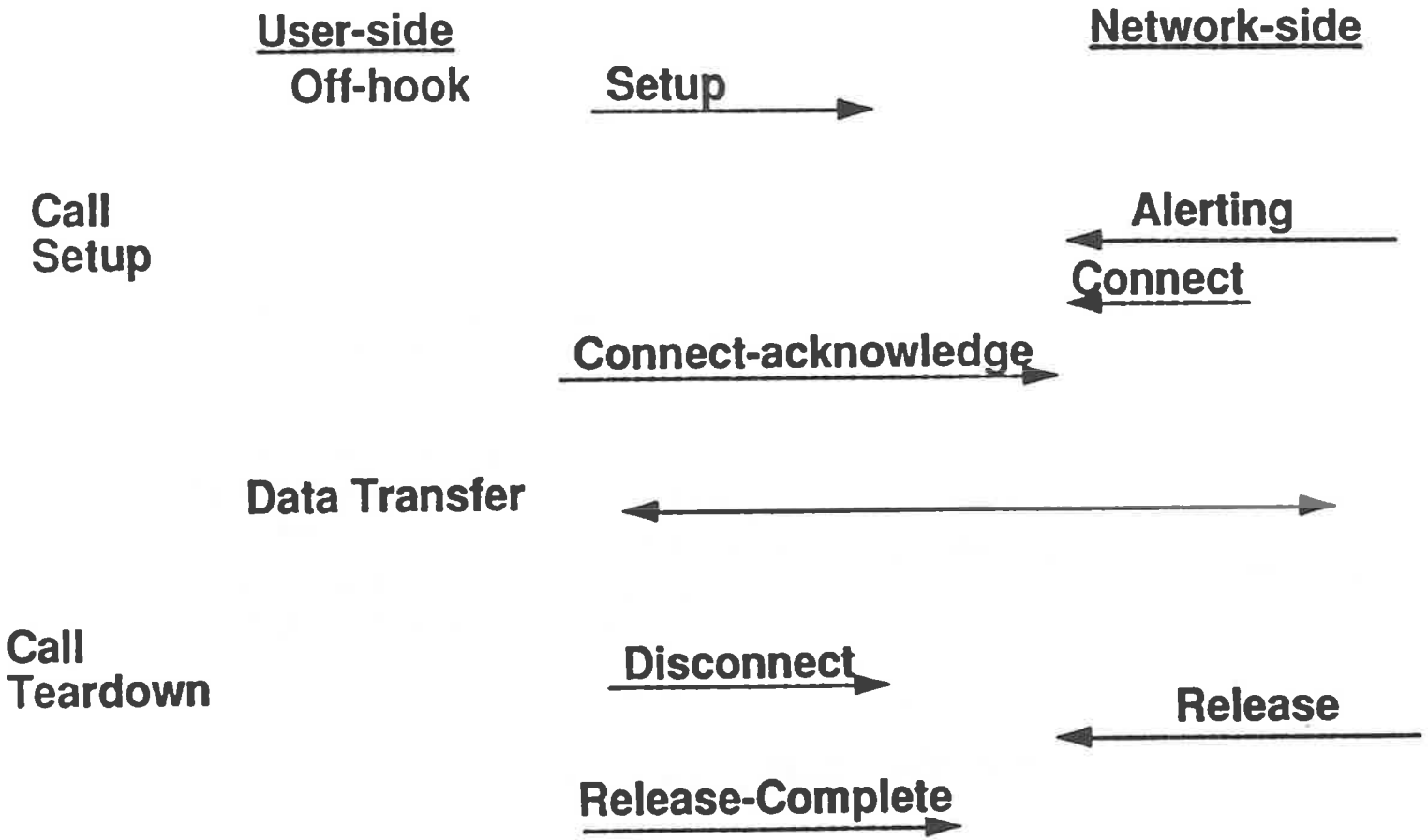
- Q.931 provides the means to
  - establish
  - maintain
  - terminate

  network connections across an ISDN between communicating application entities

Functions provided by Q.931

- Routing and relaying
- Network connection control
- Conveying user-to-network and network-to-user information
- Network connection multiplexing
- Error detection
- Error recovery
- Sequencing
- Congestion control
- Restart

Typical Q.931 Message Transfers (En-bloc Sending)



Q.931 Messages

Call establishment messages
- Alerting
- Call Proceeding
- Connect
- Connect Acknowledge
- Setup

Call information phase message
- User Information

Call clearing messages
- Disconnect
- Release
- Release Complete

Miscellaneous messages
- Status
- Status Enquiry

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Bandwidth allocation parameters

8							1	Octets
0	Bandwidth allocation parameters Information element identifier							1
Length of bandwidth allocation parameters contents								2
0	Bearer capability extensions 0 0 0 1 0 0 1							3
1 ext.	Symmetry		Configuration			0 0 spare		4
1 ext.	0 spare	Information transfer base rate						5
0 ext.	Maximum transfer rate multiplier (origination -> destination)							6
0/1 ext.	Maximum transfer rate multiplier (contd.) (MSByte) (origination -> destination)							6.1
0/1 ext.	Minimum transfer rate multiplier (origination -> destination)							6.2
1 ext.	Minimum transfer rate multiplier (contd.) (MSByte) (origination -> destination)							6.3
0 ext.	Maximum transfer rate multiplier (destination -> origination)							7 (Note 1)
0/1 ext.	Maximum transfer rate multiplier (contd.) (MSByte) (destination -> origination)							7.1 (Note 1)
0/1 ext.	Minimum transfer rate multiplier (destination -> origination)							7.2 (Note 1)
1 ext.	Minimum transfer rate multiplier (contd.) (MSByte) (destination -> origination)							7.3 (Note 1)
0	Channel identification extensions 0 0 0 1 0 1 0							8
1 ext.	Numb/ Map	Channel granularity						9
length of Channel number/Slot map field (origination -> destination)								10
Channel number/Slot map (origination -> destination)								11
length of Channel number/Slot map field (destination -> origination)								(Note 1)
Channel number/Slot map (destination -> origination)								(Note 1)

Note 1 - These fields are present only if the symmetry is bidirectional asymmetric

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Conclusions

- Q931 provides a standardized call control protocol for IEEE 802.9
- Identified a subset of Q.931 messages/info. elements necessary for point-to-point links.
- provides an easy access to ISDN (PRI & BRI) links