LECTURE

DATA COMMUNICATION STANDARDS



Standards

Importance

- Provide a "fixed" way for hardware and/or software systems (different companies) to communicate
- Help promote competition and decrease the price

Types of Standards

- Formal standards
 - Developed by an industry or government standardsmaking body
- De-facto standards
 - Emerge in the marketplace and widely used
 - Lack official backing by a standards-making body



Standardization Processes

Specification

 Developing the nomenclature and identifying the problems to be addressed

Identification of choices

 Identifying solutions to the problems and choose the "optimum" solution

Acceptance

 Defining the solution, getting it recognized by industry so that a uniform solution is accepted



Major Standards Bodies

- ISO (International Organization for Standardization)
 - Technical recommendations for data communication interfaces
 - Composed of each country's national standards orgs.
 - Based in Geneva, Switzerland
- ITU-T (International Telecommunications Union Telecom Group
 - Technical recommendations about telephone, telegraph and data communications interfaces
 - Composed of representatives from each country in UN
 - V-SERIES deals with modems

- X-series deals with public digital networks e.g e-mail.
- I & Q series deals with ISDN networks.

Major Standards Bodies (Cont.)

- ANSI (American National Standards Institute)
 - Coordinating organization for US (not a standards making body)
 - www.ansi.org
 - EIA is responsible for developing RS series of standards.
 - TIA represents manufactures of communications and information technology products.

IEEE (Institute of Electrical and Electronic Engineers)

Professional society; also develops mostly LAN standards

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standards.ieee.org

Some Data Comm. Standards

<u>Layer</u>	<u>Common Standards</u>
5. Application layer	HTTP, HTML (Web) MPEG, H.323 (audio/video) IMAP, POP (e-mail)
4. Transport layer	TCP (Internet) SPX (Novell LANs)
3. Network layer	IP (Internet) IPX (Novell LANs)
2. Data link layer	Ethernet (LAN) Frame Relay (WAN) PPP (dial-up via modem for MAN)
1. Physical layer	RS-232c cable (LAN) Category 5 twisted pair (LAN) V.92 (56 kbps modem)