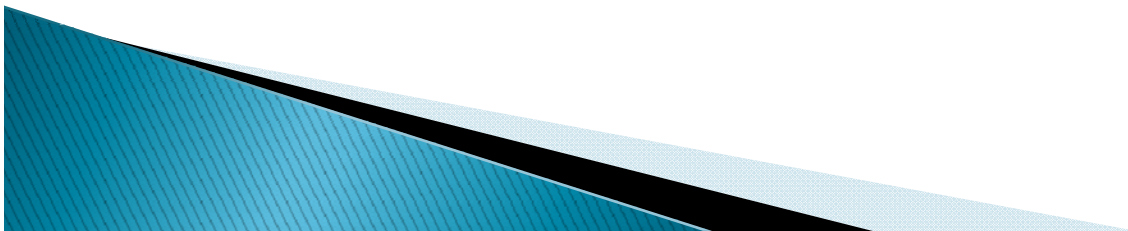


LECTURE

DATA COMMUNICATION STANDARDS



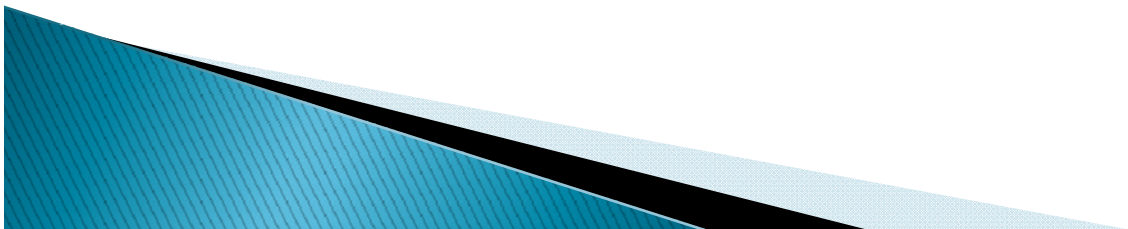
Standards

▶ Importance

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

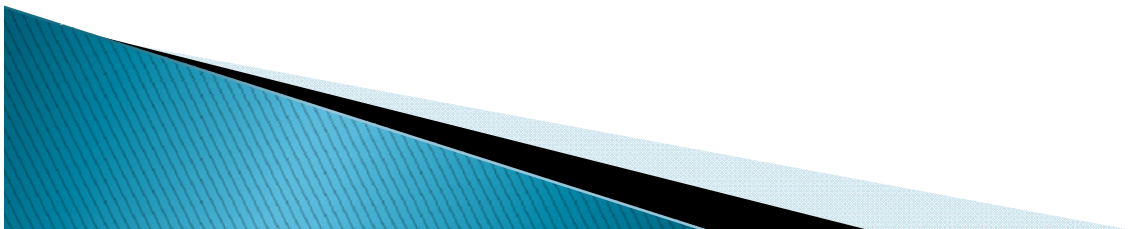
▶ Types of Standards

- Formal standards
 - Developed by an industry or government standards-making 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
 - 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)