Networking Standards Organizations

- **Standards:** documented agreements containing technical specifications or other precise criteria stipulating how particular products or services should be designed or performed
  - Define minimum acceptable performance
- Many different organizations have evolved to oversee computer industry's standards

IEEE

- Institute of Electrical and Electronics Engineers
- International society composed of engineering professionals
- Goals are to promote development and education in electrical engineering and computer science
- **IEEE** technical papers and standards are highly respected in the networking profession
  - Can purchase IEEE documents online from IEEE's

ISO

- International Organization for Standardization
- Collection of organization standards representing **146 countries**
- Goal is to establish international technological standards to facilitate global exchange of information and barrier-free trade
- Fewer than 300 of ISO's more than **14,350 standards** apply to computer-related products and functions

ANSI

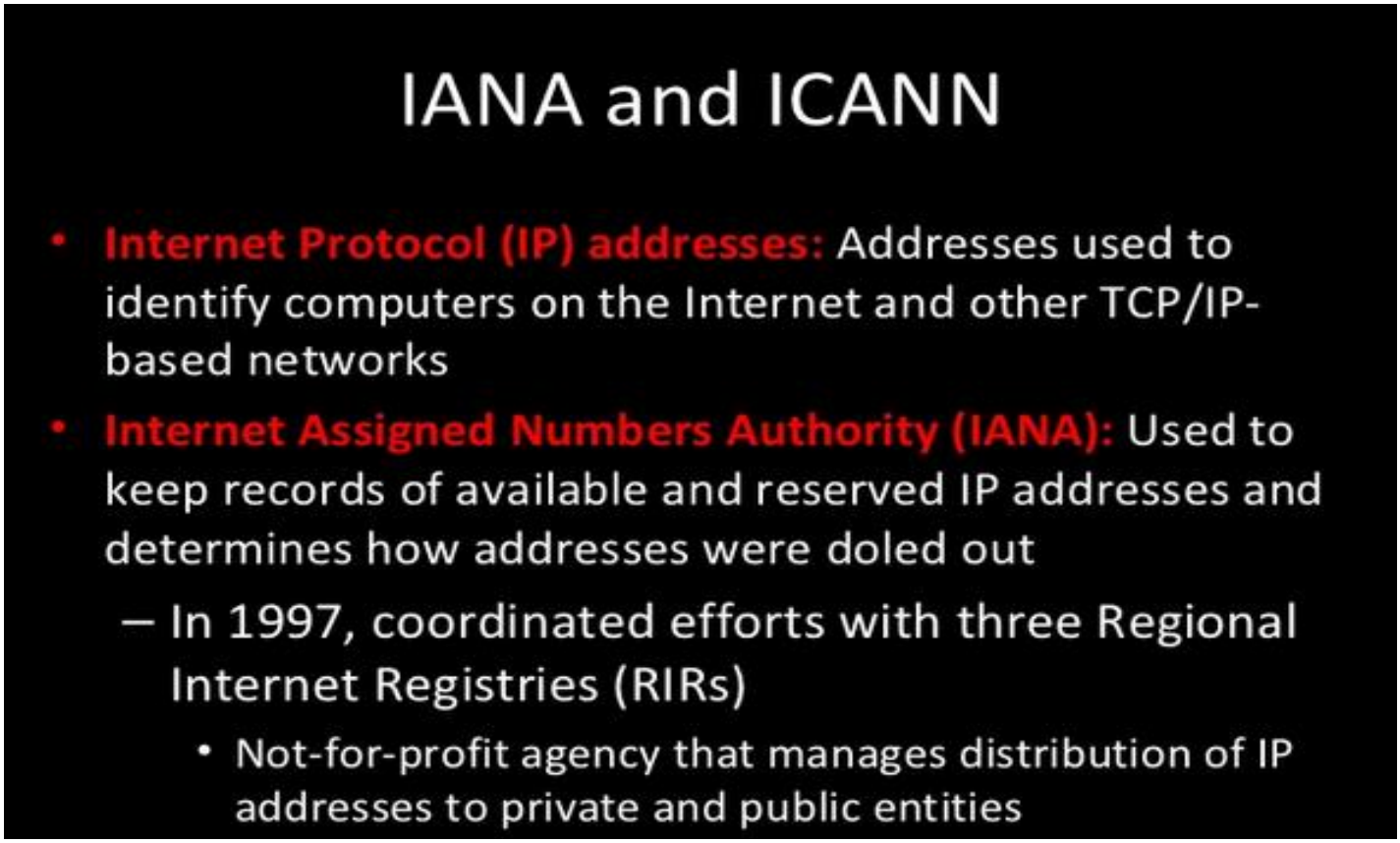
- **American National Standards Institute (ANSI)**
  - Composed of more than a thousand representatives from industry and government
  - Represents United States in setting international standards
- **ANSI standards documents available:**
  - ANSI's Web site (www.ansi.org)
  - At university or public libraries

EIA and TIA

- **Electronic Industries Alliance (EIA):** Trade organization composed of representatives from electronics manufacturing firms across US
  - Sets standards for its members
  - Helps write ANSI standards
  - Lobbies for legislation favorable to growth of computer and electronics industries
- **Telecommunications Industry Association (TIA):** Focuses on standards for information technology (IT), wireless, satellite, fiber optics, and telephone equipment

ITU

- **International Telecommunication Union**
- Regulates international telecommunications:
  - **Radio and TV frequencies**
  - **Satellite and telephony specifications**
  - **Networking infrastructure**
  - **Tariffs applied to global communications**
- Typically, documents pertain more to global telecommunications issues than to industry technical specifications



W3C

The W3C is the organization that sets document transfer and programming standards for the Web. The term "web" is short for "world wide web", which basically came into being in 1989 when Tim Berners-Lee implemented the first Hypertext Transfer Protocol (HTTP) communication between a client and server via the Internet.

The W3C consists of working groups that develop standards. The Hypertext Markup Language (HTML) working group recently released version 5 of the language (HTML5). The W3C also has an Interest Group that brings together people to evaluate potential Web technologies and policies, a Coordination Group which manages dependencies and facilitates communication with other groups, within or outside of W3C, and many other working groups.

ECMA International

The ECMA was founded in 1961 as the European Computer Manufacturers Association. In 1994, in order to reflect their activities beyond Europe, they changed their name to ECMA International. Their main contribution to the Internet is their maintenance of the standard for the JavaScript programming language (ECMA-262).

JavaScript is an extremely popular and very powerful scripting language that can be used to make a web page perform like an application. It was created by Netscape and first released in 1995 as part of Netscape Navigator 2.0. In 1996 Netscape submitted JavaScript to ECMA International to be maintained as an industry standard.

Physical Layer

At Layer 1, the Physical layer of the OSI model is responsible for ultimate transmission of digital data bits from the Physical layer of the sending (source) device over network communications media to the Physical layer of the receiving (destination) device. Examples of Layer 1 technologies include Ethernet cables and Token Ring networks. Additionally, hubs and other repeaters are standard network devices that function at the Physical layer, as are cable connectors.

At the Physical layer, data are transmitted using the type of signaling supported by the physical medium: electric voltages, radio frequencies, or pulses of infrared or ordinary light.