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Standards Organizations

3.4.1

Open Standards



When buying new tires for a car, there are many manufacturers you might choose. Each of them will have at least one type of tire that fits your car. That is because the automotive industry uses standards when they make cars. It is the same with protocols. Because there are many different manufacturers of network components, they must all use the same standards. In networking, standards are developed by international standards organizations.

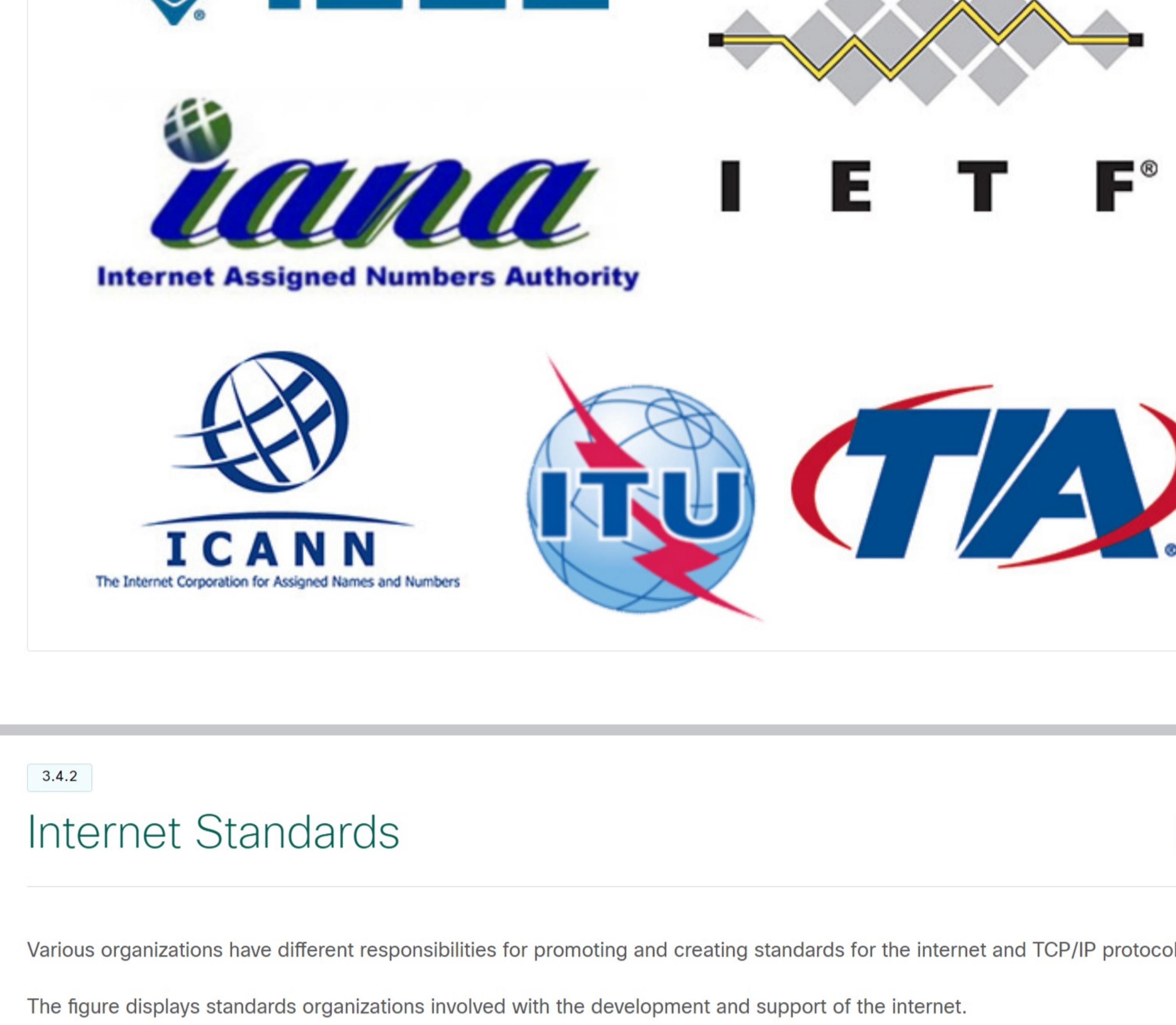
Open standards encourage interoperability, competition, and innovation. They also guarantee that the product of no single company can monopolize the market or have an unfair advantage over its competition.

A good example of this is when purchasing a wireless router for the home. There are many different choices available from a variety of vendors, all of which incorporate standard protocols such as IPv4, IPv6, DHCP, SLAAC, Ethernet, and 802.11 Wireless LAN. These open standards also allow a client running the Apple OS X operating system to download a web page from a web server running the Linux operating system. This is because both operating systems implement the open standard protocols, such as those in the TCP/IP protocol suite.

Standards organizations are usually vendor-neutral, non-profit organizations established to develop and promote the concept of open standards. These organizations are important in maintaining an open internet with freely accessible specifications and protocols that can be implemented by any vendor.

A standards organization may draft a set of rules entirely on its own or, in other cases, may select a proprietary protocol as the basis for the standard. If a proprietary protocol is used, it usually involves the vendor who created the protocol.

The figure shows the logo for each standards organization.

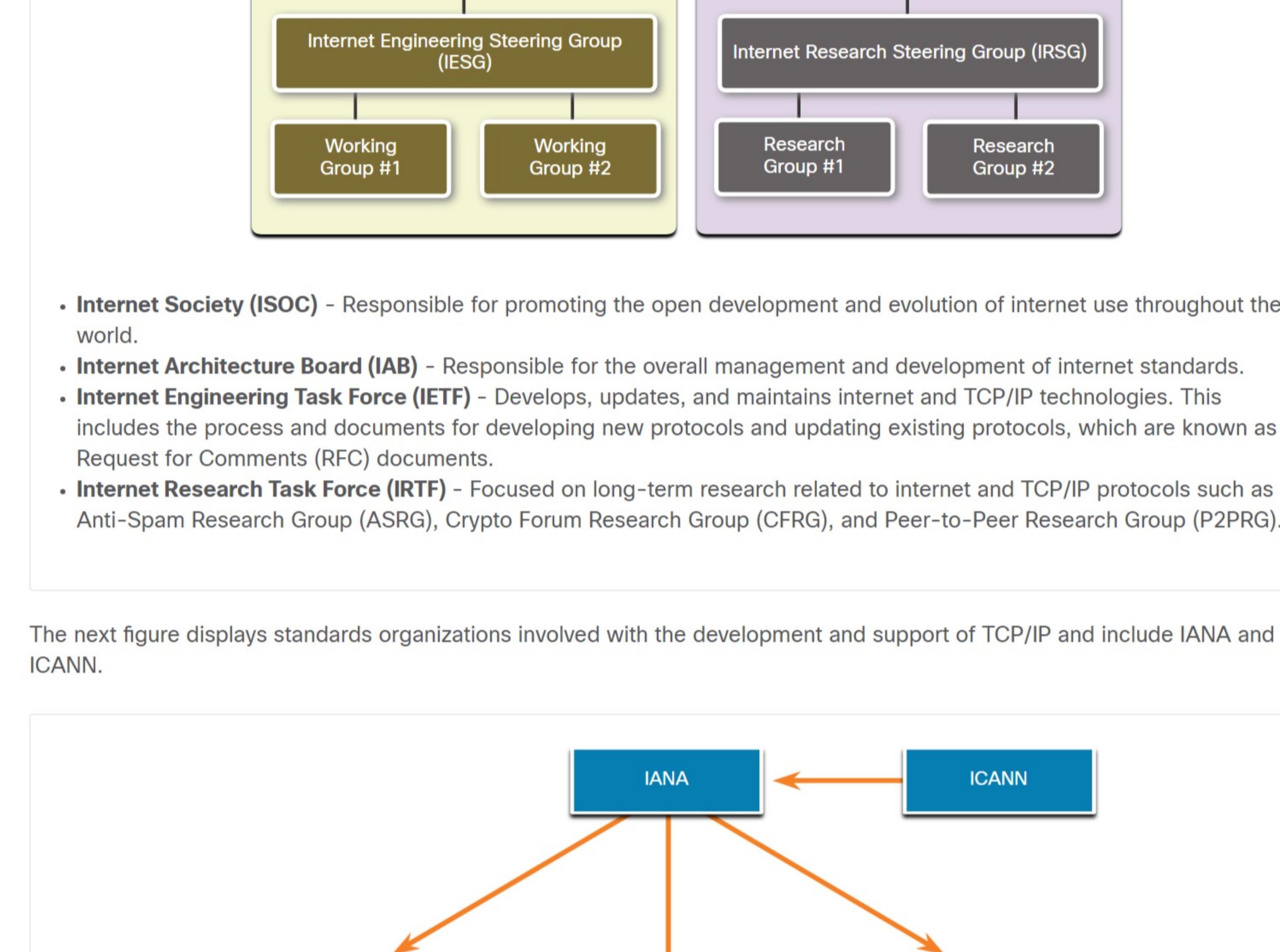


Internet Standards



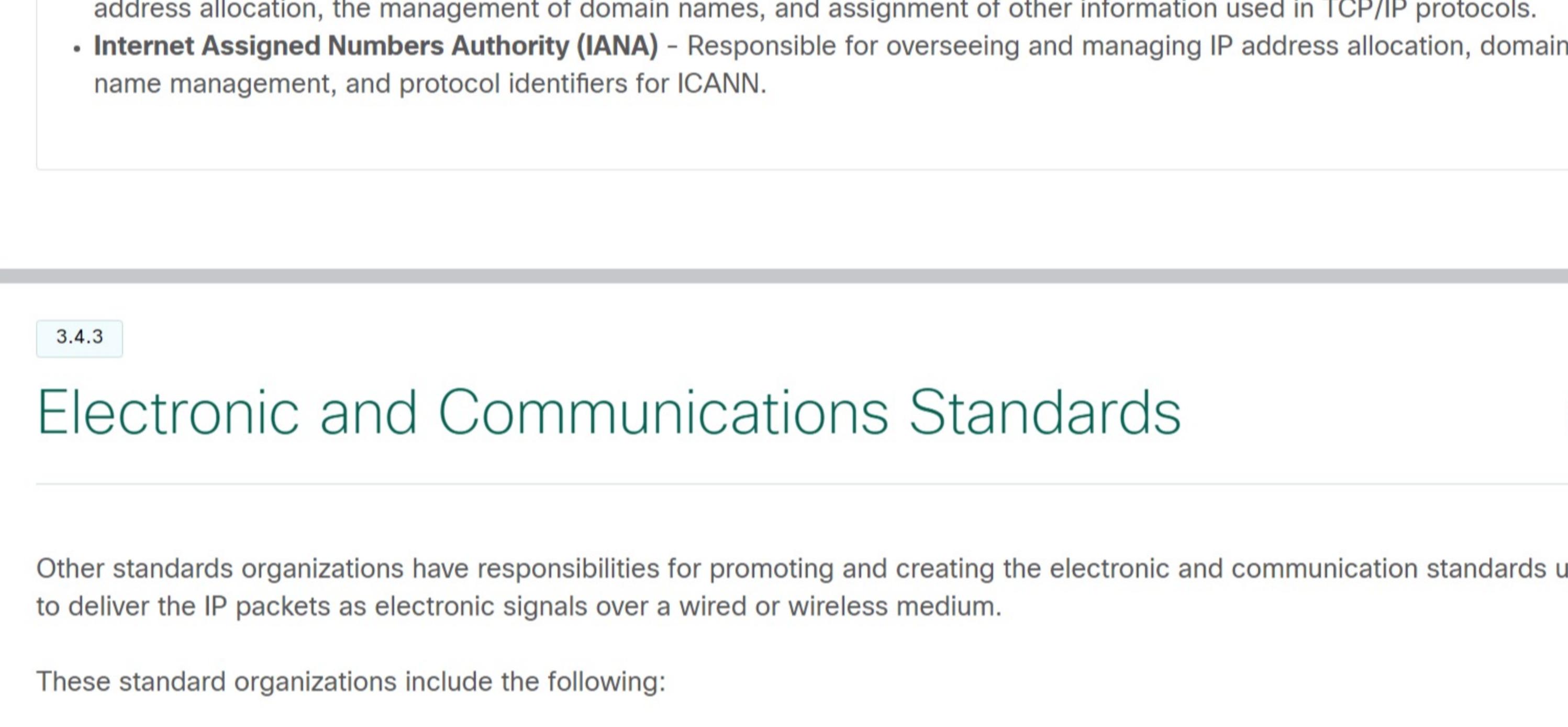
Various organizations have different responsibilities for promoting and creating standards for the internet and TCP/IP protocol.

The figure displays standards organizations involved with the development and support of the internet.



- **Internet Society (ISOC)** – Responsible for promoting the open development and evolution of internet use throughout the world.
- **Internet Architecture Board (IAB)** – Responsible for the overall management and development of internet standards.
- **Internet Engineering Task Force (IETF)** – Develops, updates, and maintains internet and TCP/IP technologies. This includes the process and documents for developing new protocols and updating existing protocols, which are known as Request for Comments (RFC) documents.
- **Internet Research Task Force (IRTF)** – Focused on long-term research related to internet and TCP/IP protocols such as Anti-Spam Research Group (ASRG), Crypto Forum Research Group (CFRG), and Peer-to-Peer Research Group (P2PRG).

The next figure displays standards organizations involved with the development and support of TCP/IP and include IANA and ICANN.



- **Internet Corporation for Assigned Names and Numbers (ICANN)** – Based in the United States, ICANN coordinates IP address allocation, the management of domain names, and assignment of other information used in TCP/IP protocols.
- **Internet Assigned Numbers Authority (IANA)** – Responsible for overseeing and managing IP address allocation, domain name management, and protocol identifiers for ICANN.

Electronic and Communications Standards



Other standards organizations have responsibilities for promoting and creating the electronic and communication standards used to deliver the IP packets as electronic signals over a wired or wireless medium.

These standard organizations include the following:

- **Institute of Electrical and Electronics Engineers (IEEE, pronounced "i-triple-E")** – Organization of electrical engineering and electronics dedicated to advancing technological innovation and creating standards in a wide area of industries including power and energy, healthcare, telecommunications, and networking. Important IEEE networking standards include 802.3 Ethernet and 802.11 WLAN standard. Search the internet for other IEEE network standards.
- **Electronic Industries Alliance (EIA)** – Organization is best known for its standards relating to electrical wiring, connectors, and the 19-inch racks used to mount networking equipment.
- **Telecommunications Industry Association (TIA)** – Organization responsible for developing communication standards in a variety of areas including radio equipment, cellular towers, Voice over IP (VoIP) devices, satellite communications, and more.
- **International Telecommunications Union-Telecommunication Standardization Sector (ITU-T)** – One of the largest and oldest communication standards organizations. The ITU-T defines standards for video compression, Internet Protocol Television (IPTV), and broadband communications, such as a digital subscriber line (DSL).

Lab - Research Networking Standards



In this lab, you will complete the following objectives:

- Part 1: Research Networking Standards Organizations
- Part 2: Reflect on Internet and Computer Networking Experience

Research Networking Standards

3.4.5

Check Your Understanding - Standards Organizations



Check your understanding of standards organizations by choosing the BEST answer to the following questions.

1. True or false. Standards organizations are usually vendor-neutral.

True

False

2. This standards organization is concerned with the Request for Comments (RFC) documents that specify new protocols and update existing ones.

Internet Society (ISOC)

Internet Engineering Task Force (IETF)

Internet Architecture Board (IAB)

Internet Research Task Force (IRTF)

3. This standards organization is responsible for IP address allocation and domain name management.

Internet Society (ISOC)

Internet Engineering Task Force (IETF)

Internet Architecture Board (IAB)

Internet Assigned Numbers Authority (IANA)

4. What types of standards are developed by the Electronics Industries Alliance (EIA)?

electric wiring and connectors

radio equipment and cell towers

video compression and broadband communications

Voice over IP (VoIP) and satellite communications

Check

Show Me

Reset