

Chapter 1

Introduction

Objectives

Upon completion you will be able to:

- *Understand how the Internet came into being*
- *Understand the meaning of the terms protocol and standard*
- *Understand the various organizations involved in the standards*
- *Understand the different levels of Internet service providers*
- *Understand the groups involved in Internet administration*

1.1 A Brief History

*A network is a group of connected, communicating devices. An **internet** is two or more networks that can communicate with each other. The most notable internet is called the **Internet**. Millions of people are users. Yet this extraordinary communication system only came into being in 1969.*

The topics discussed in this section include:

ARPANET

Birth of the Internet

Transmission Control Protocol / Internetworking Protocol

MILNET

CSNET, NSFNET & ANSNET

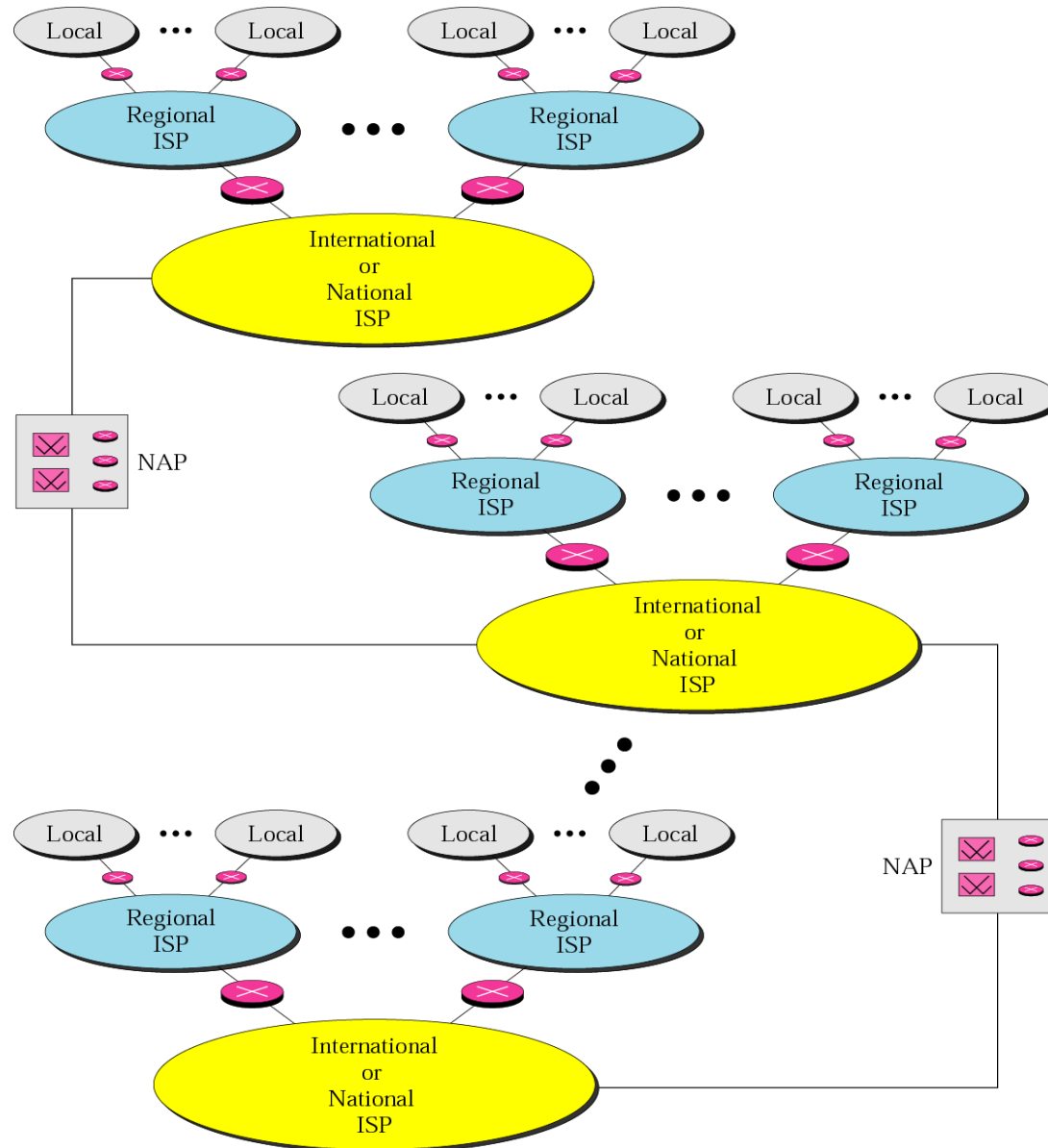
The Internet Today

Time Line

Growth of the Internet

TCP/IP Protocol
Suite

Figure 1.1 *Internet today*



TCP/IP Protocol
Suite

1.2 Protocols and Standards

In this section, we define two widely used terms: protocols and standards. First, we define protocol, which is synonymous with “rule.” Then we discuss standards, which are agreed-upon rules.

The topics discussed in this section include:

Protocols

Standards



Protocols and Standards

Protocols

Rules that govern Data Communication

Syntax: Format of Data

Semantics: Meaning of Each section of bits

Timing: When should be sent and how fast it can be sent.

Standards

Guidelines to manufacturers, vendors & other service providers

De facto: Not approved but widely used. Established originally by manufacturers

De jure: Legislated by an officially recognized body.

1.3 Standards Organizations

Standards are developed through the cooperation of standards creation committees, forums, and government regulatory agencies.

The topics discussed in this section include:

Standards Creation Committees

Forums

Regulatory Agencies



Note:

The websites for the standardization organizations are given in Appendix F.

1.4 Internet Standards

An Internet standard is a thoroughly tested specification. There is a strict procedure by which a specification attains Internet standard status. A specification begins as an Internet draft, working document with no official status and a six-month lifetime. A draft may be published as a Request for Comment (RFC).

The topics discussed in this section include:

Maturity Levels

Requirement Levels

Figure 1.2 *Maturity levels of an RFC*

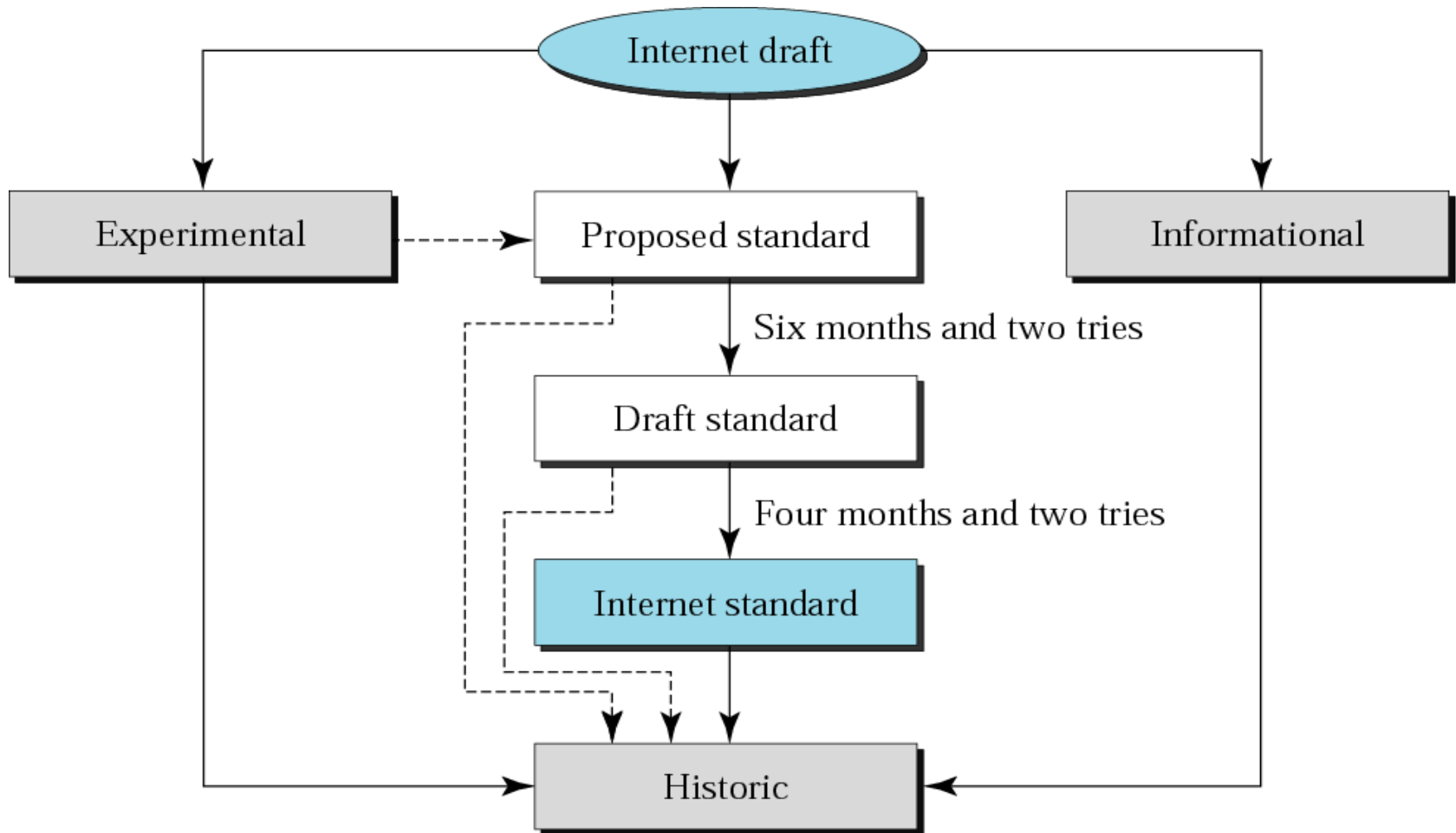
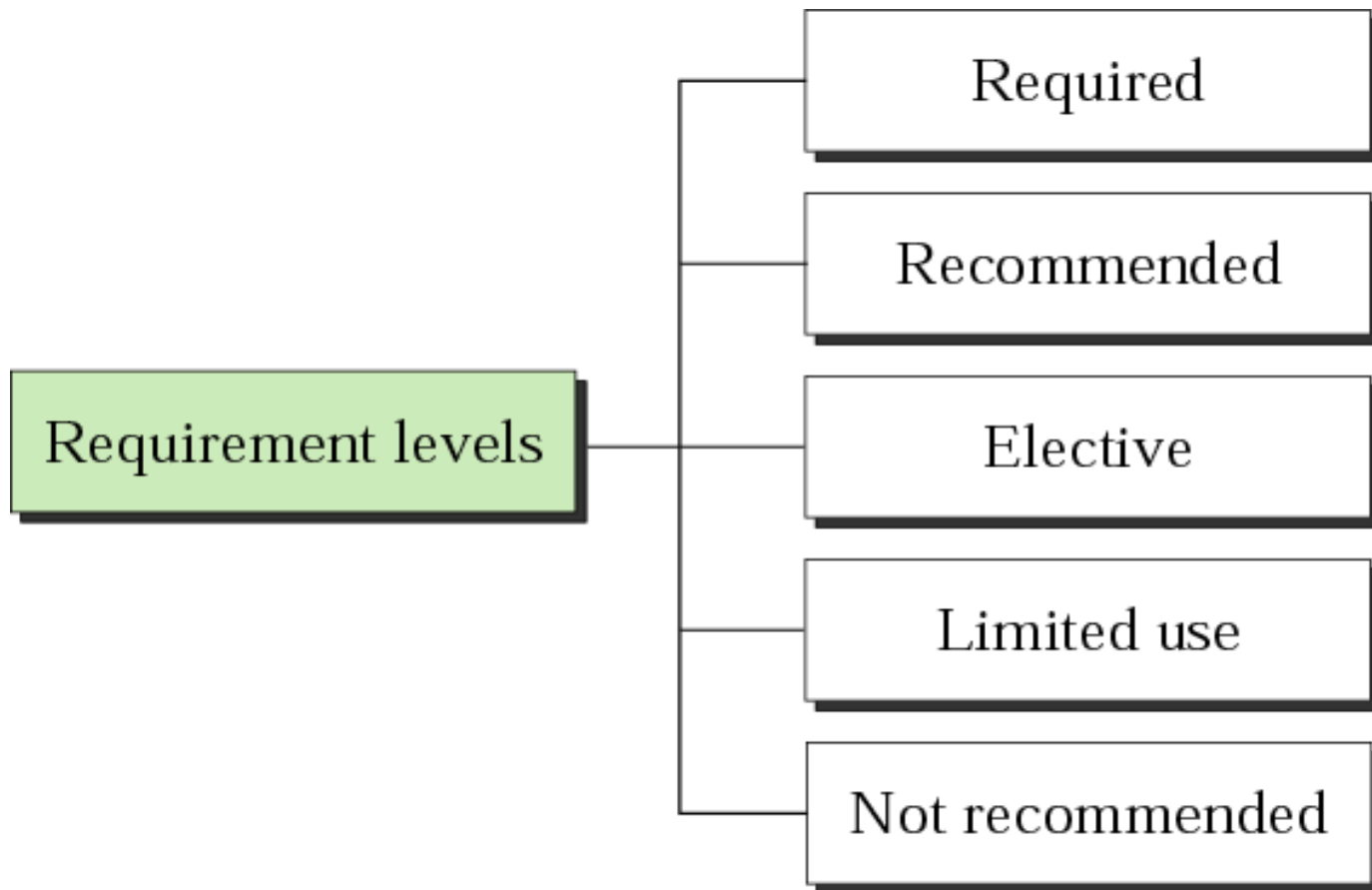


Figure 1.3 *Requirement levels of an RFC*





Note:

*RFCs can be found at
www.faqs.org/rfcs*

1.5 Internet Administration

The Internet has evolved and gained a broader user base with significant commercial activity. Various groups that coordinate Internet issues have guided this growth and development.

The topics discussed in this section include:

Internet Society (ISOC)

Internet Architecture Board (IAB)

Internet Engineering Task Force (IETF)

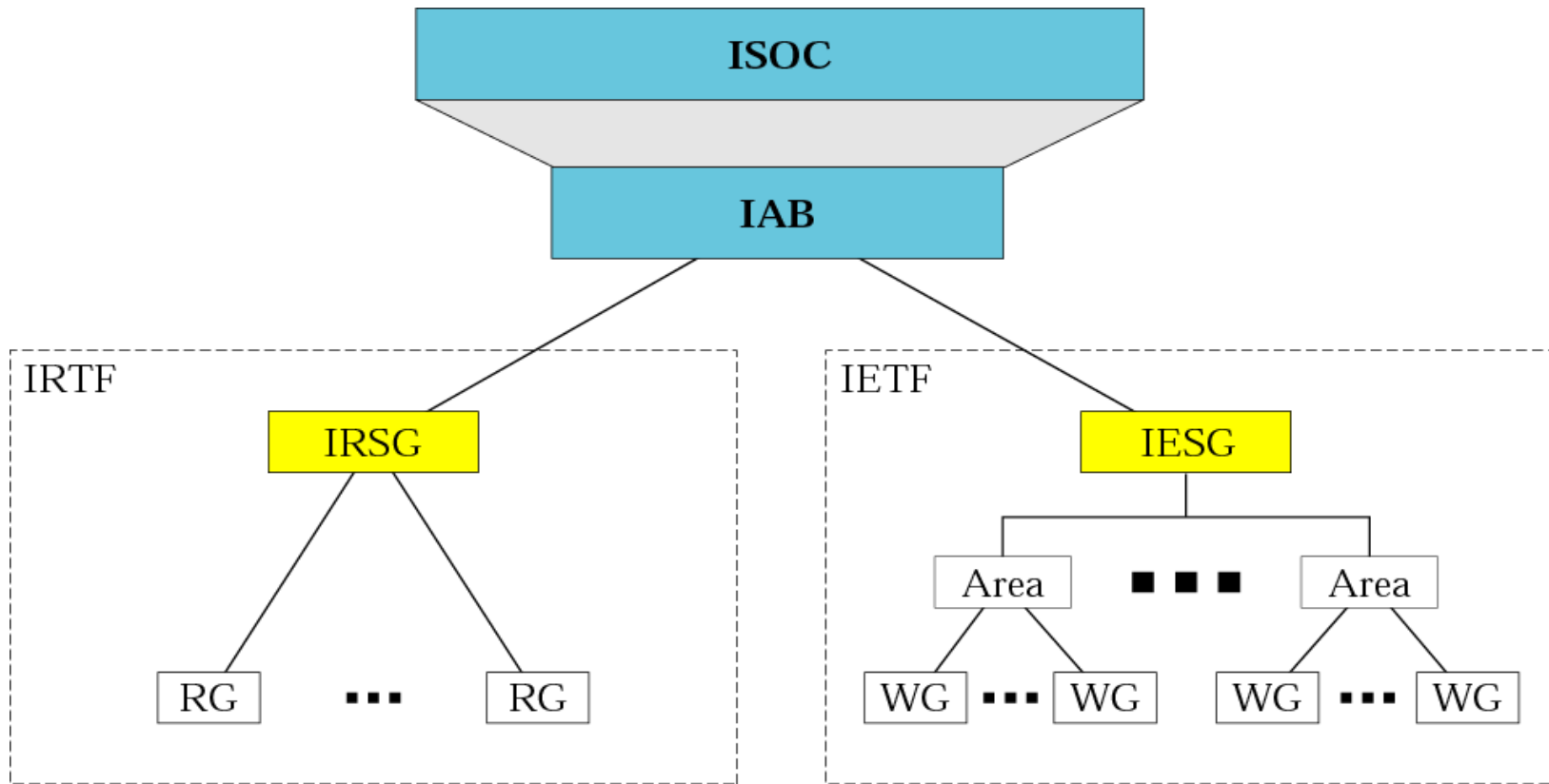
Internet Research Task Force (IRTF)

Internet Assigned Numbers Authority (IANA)

Names and Numbers (ICANN)

Network Information Center (NIC)

Figure 1.4 *Internet administration*



Internet Society (ISOC)

Non-profit organization formed in 1992, supports internet standards process.

Internet Architecture Board (IAB): Technical advisor to ISOC. Development of TCP/IP Suite, Editorial Management of RFCs.

Internet Engineering Task Force (IETF):

Identify operational problems and propose the solutions. Works in nine areas: Applications, Internet Protocols, Routing, Operations, User Services, Network Management, Transport, IP Nxt Gen, Security.

Internet Research Task Force (IRTF)

Forum of working groups. Focuses on long term research topics.

Internet Assigned Numbers Authority (IANA):

Responsible for Domain names and addresses.

Network Information Center (NIC):

Responsible for collecting and distributing information about TCP/IP protocols.



THE END....