ネットワークコンピューティング
第13回

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Summary of the lecture

- Introduction and Overview of TCP/IP Networking
- Client and Server Model, Introduction of Network Programming
- Client Programming (TCP)
- Server Programming (TCP)
  - Fork, Select, Thread
- Domain Name System
- Client Programming (UDP)
- Server Programming
  - epoll(), mutex, curses
- NTP

Internet Standards Process

- The IETF Standards Process
  - The basic definition of the IETF standards process is in RFC2026 (BCP9).
  - The intellectual property rules are now separate, in RFC5379 (BCP78: rights in contributions) and RFC3979 (BCP79: rights in technology).
  - Another update is RFC3932 (BCP92: independent submissions to the RFC Editor).
  - An overview of many process documents is available in “The Process: An Informal Guide”.

URL: http://www.ietf.org/about/standards-process.html

What is IETF ?

- Internet Engineering Task Force formed in 1986.
  - A large open international community of network designers, operators, vendors and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.
  - It is open to any interested individual.
- Mission statement of IETF (RFC3935)
  - The mission of the IETF is to make the internet work better by producing high quality, relevant technical documents that influence the way people design, use, and manage the Internet.

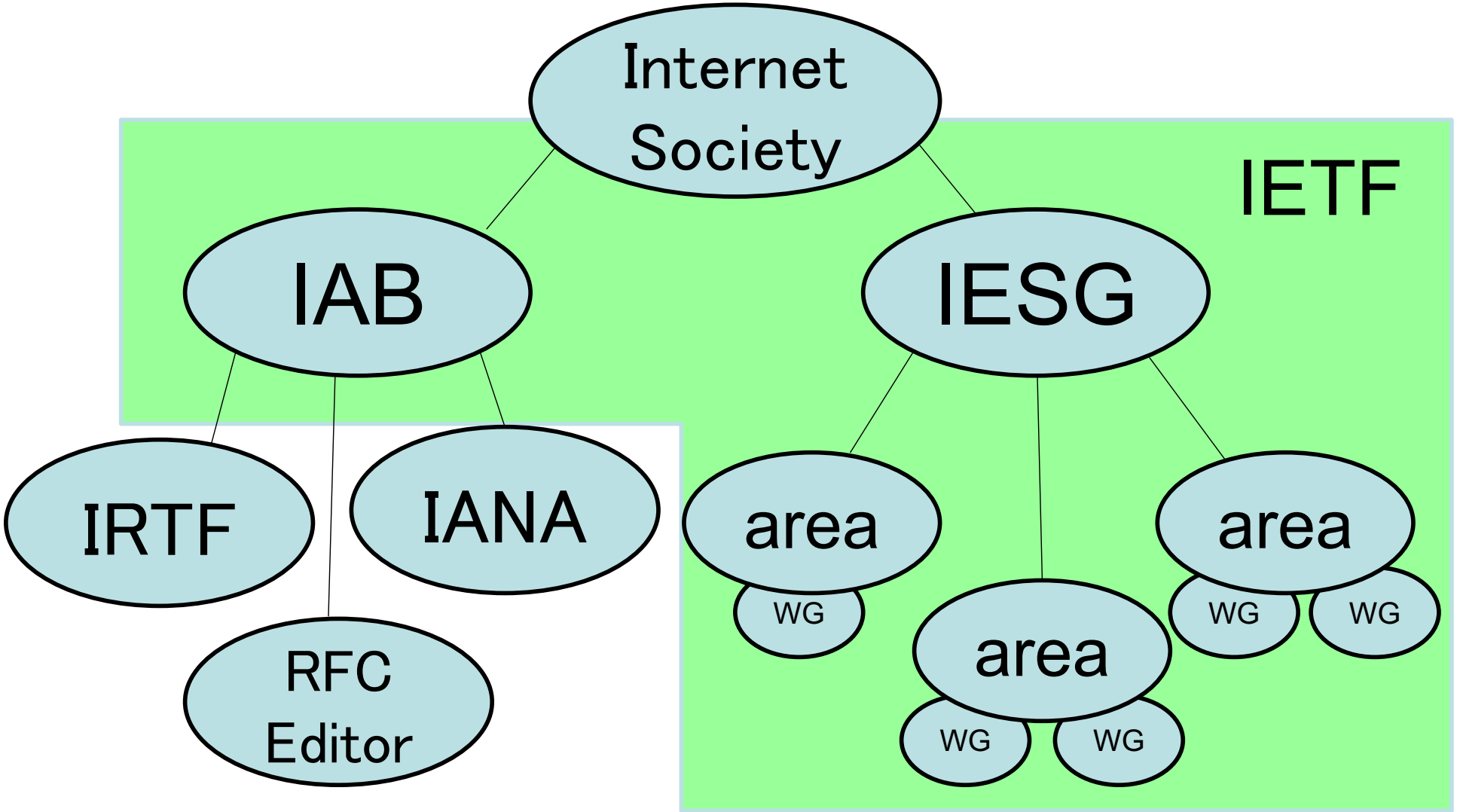
Principles of IETF (1)

- Open process
  - Any interested person can participate in the work, know what is being decided, and make his/her voice heard on the issue.
- Technical competence
  - The IETF is willing to listen to technically competent input from any source. Technical competence also means that we expect IETF output to be designed to sound network engineering principles.
- Volunteer Core
  - Our participants and our leadership are people who come to the IETF because they want to do work that futures the IETF's mission of "making the Internet work better"

Principles of IETF (2)

- Rough consensus and running code
  - We make standards based on the combined engineering judgment of our participants and our real-world experience in implementing and deploying our specifications.
- Protocol ownership
  - When the IETF takes ownership of a protocol or function, it accepts the responsibility for all aspects of the protocol, even though some aspects may rarely or never be seen on the Internet. Conversely, when the IETF is not responsible for a protocol or function, it does not attempt to exert control over it, even though it may at times touch or affect the Internet.

Structure of IETF



IETF overview

- IAB: Internet Architecture Board
  - The IAB provides long-range technical direction for Internet development, ensuring the Internet continues to grow and evolve as a platform for global communication and innovation.
- IESG: Internet Engineering Steering Group
  - The IESG is responsible for technical management of IETF activities and the Internet standards process. The IESG consists of the Ads who are selected by the Nominations Committee and are appointed for two years.
- AD: Area Director
  - The manager of an IETF Area. An Area consists of Working Groups.

Related Organizations

- ISOC: The Internet Society
  - The ISOC is a professional membership organization of Internet experts that comments on policies and practices and oversees a number of other boards and taskforces dealing with network policy issues.
- IRTF: Internet Research Task Force
  - The IRTF promotes research of importance to the evolution of the Internet by creating focused, long-term Research Groups working on topics related to Internet protocols, applications, architecture and technology.
- IANA: Internet Assigned Numbers Authority
  - Central coordinator for the assignment of unique parameter values for Internet protocols.

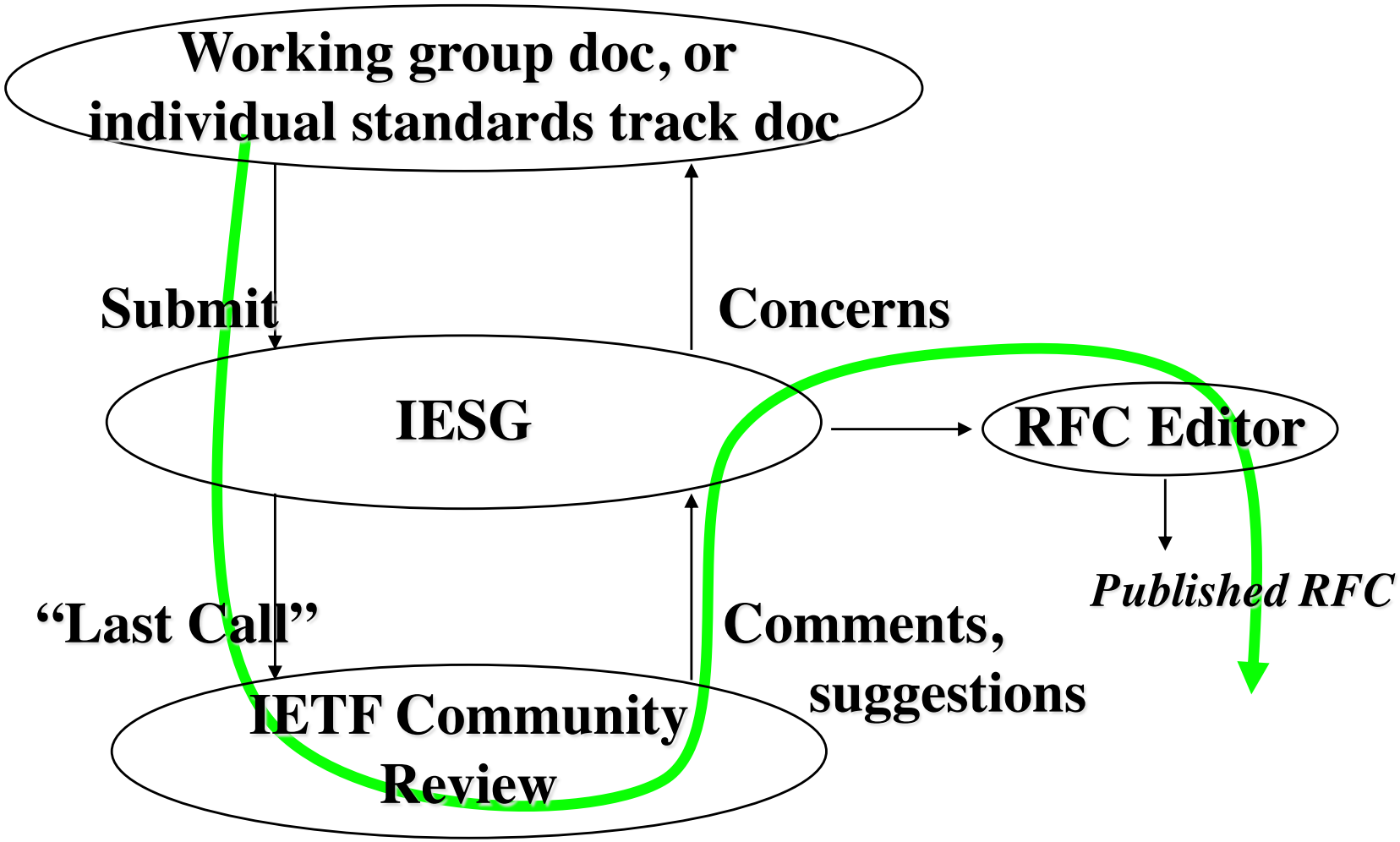
Internet Standards Procedures

- Internet-Drafts
  - Internet-Drafts are working documents of the IETF.
  - Internet-Drafts have no formal status, and are subject to change or removal at any time; therefore they should not be cited or quoted in any formal documents.
- RFC: Request for Comments
  - Official publication channel for Internet standards documents and other publications of the IESG, IAB, and Internet community.

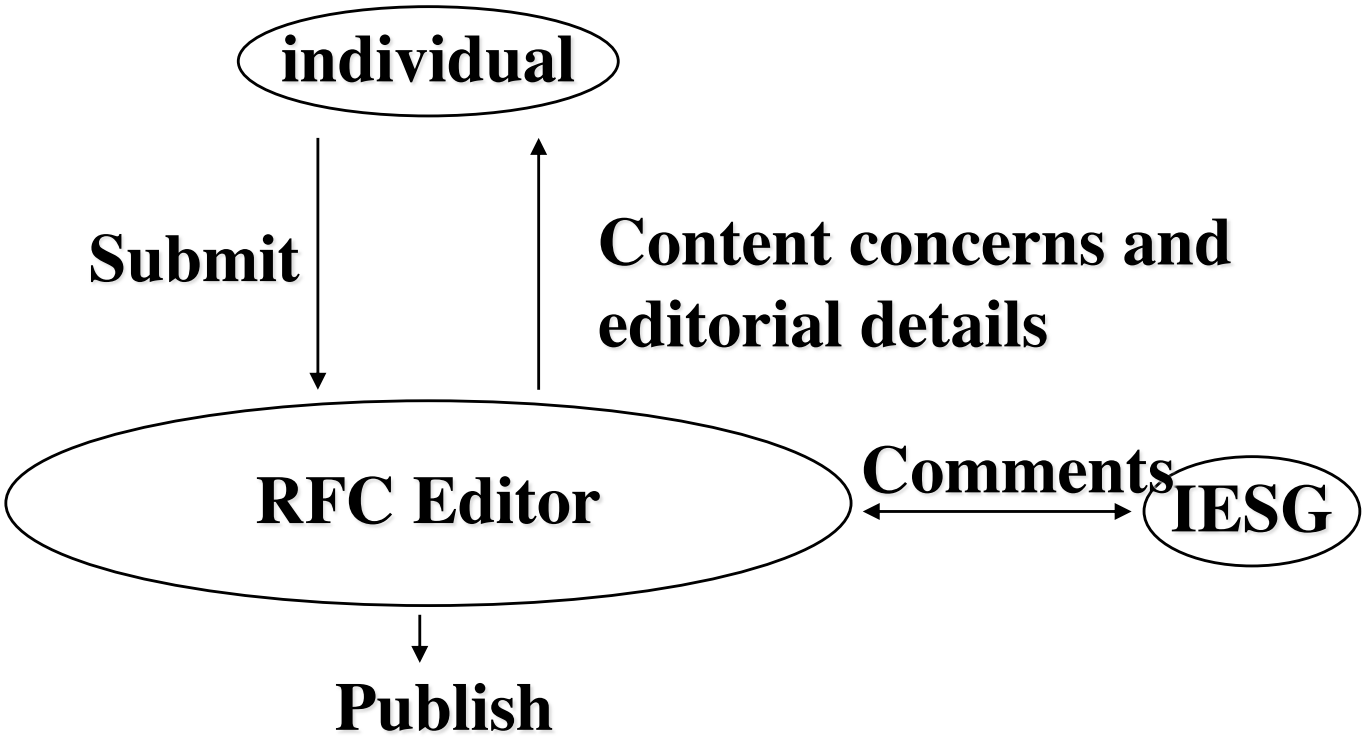
Standards Procedure

- generally Birds of a Feather (BOF) first
- most work done in a Working Group
  - proposals published as Internet Drafts
- proposal reviewed by AD
  - can be sent back to working group
- IETF Last-Call (4-week if no Working Group)
- IESG review
  - can be sent back to working group
- publication as RFC

IETF Submission



Non-IETF Submissions



Type of RFCs

- Standards Track RFCs
  - (BCP: Best Current Practice)
  - PS: Proposed Standard
  - DS: Draft Standard
  - STD: Internet Standard
- Non-Standards Track RFCs
  - Experimental
  - Informational
  - Historical

Standards Track Maturity Levels (RFC2026)

- Proposed Standard
  - A specification is generally stable, has resolved known design choices, is believed to be well-understood, has received significant community review, and appears to enjoy enough community interest to be considered valuable.
- Draft Standard
  - At least two independent and interoperable implementation from different code bases have been developed, and for which sufficient successful operational experience has been obtained.
- Internet Standard
  - A specification for which significant implementation and successful operational experience has been obtained .

RFC6410: Reducing the Standards Track to Two Maturity Levels