

# The Internet Engineering Task Force: Overview, Activities, Priorities

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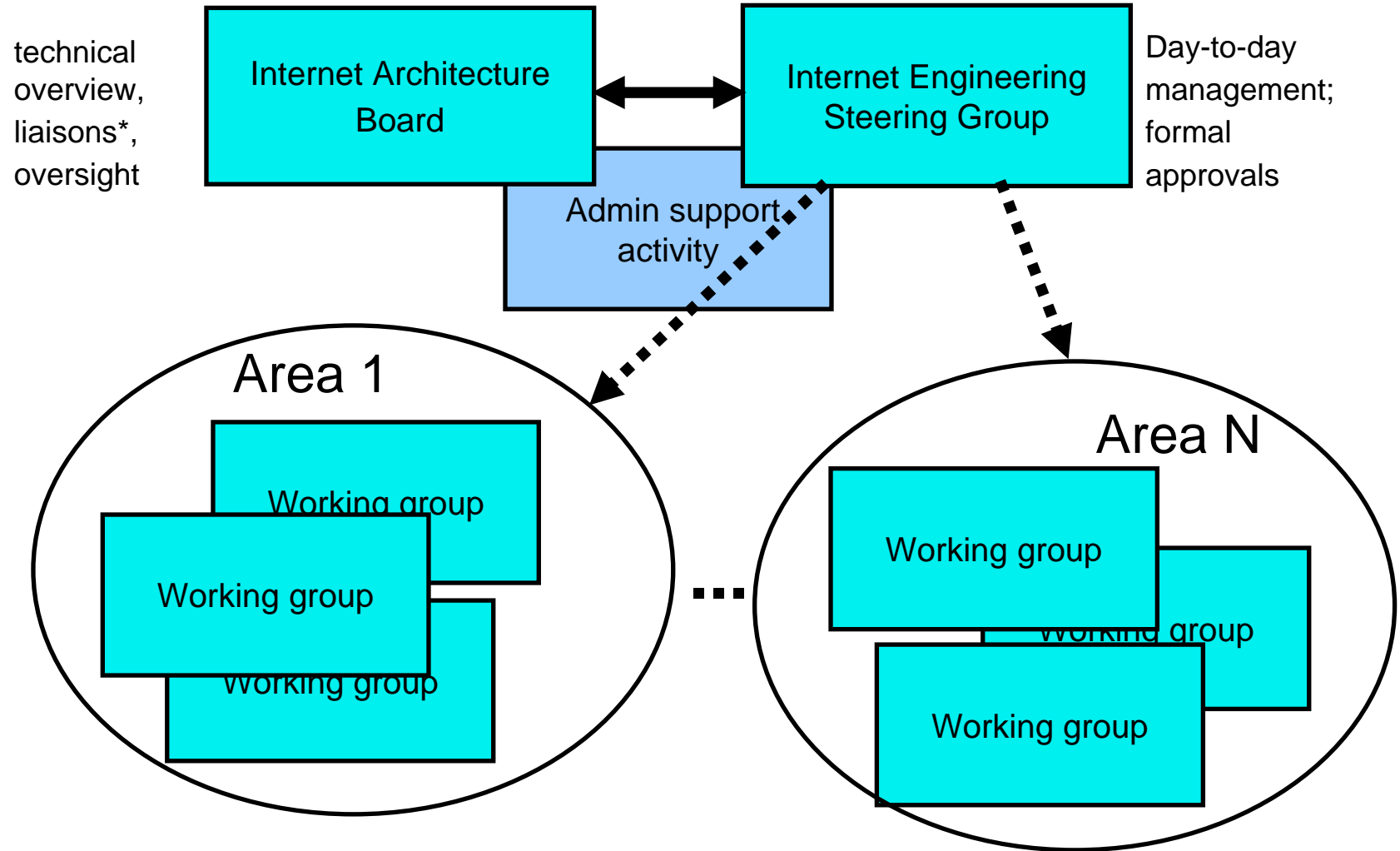
*ISOC BoT, 2006-02-10*

# What is the IETF?

<http://www.ietf.org>

- **Writes basic Internet protocol standards**
- **About 120 working groups (WGs)**
- **Open group of >2000 individual engineers from many countries**
  - **IT industry and Telecommunications industry**
  - **<10% from academia**
- **Informal organization but...**
  - **Legal and financial umbrella from ISOC**
  - **~60% of budget from meeting fees, ~40% from ISOC**
  - **Budget around \$3M**

# IETF Structure

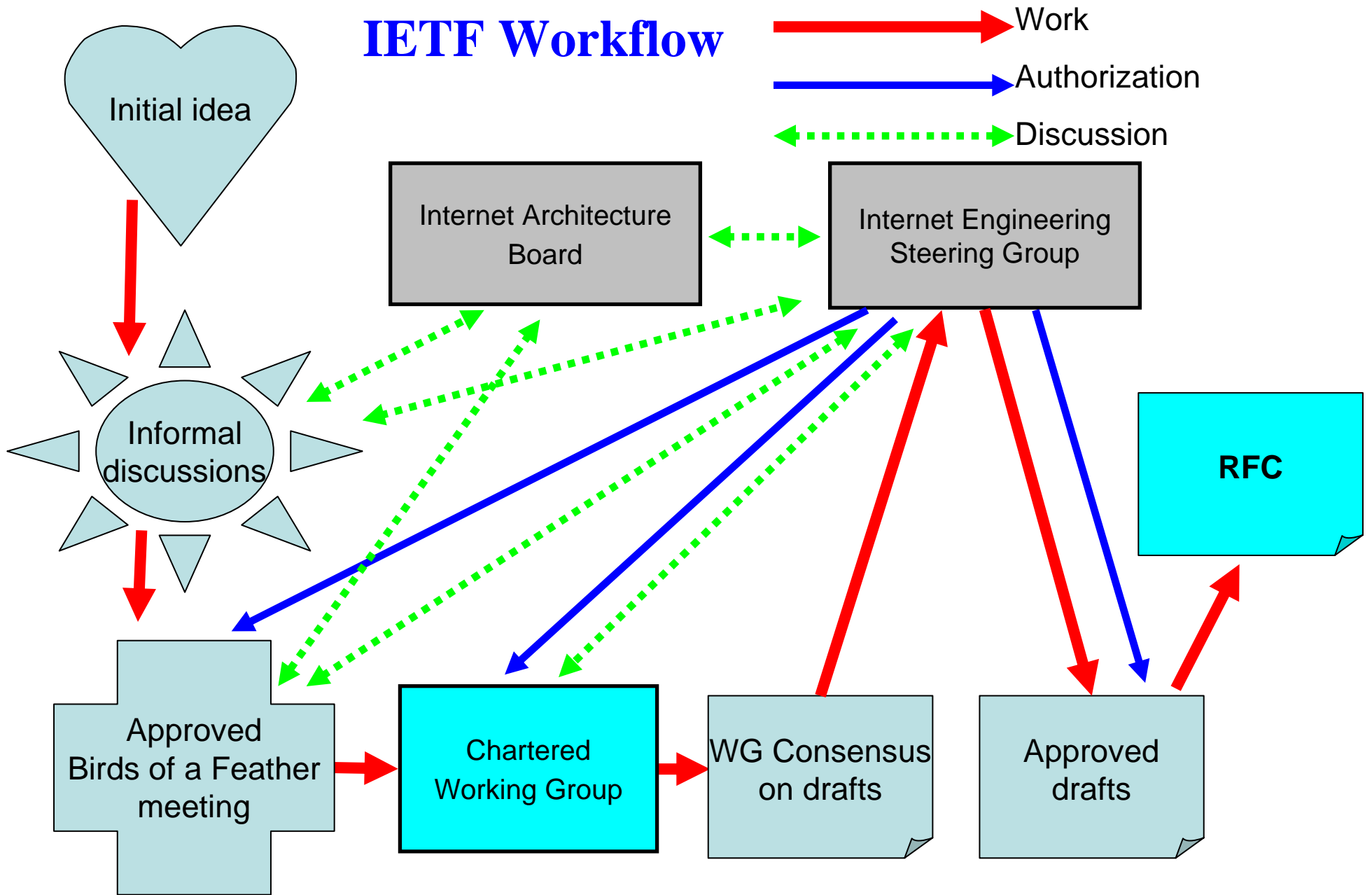


\*technical liaisons occur at WG level

# Meetings

- **The IETF meets three times a year for a week**
  - **Individual WG meetings**
  - **Cross-check between WGs**
  - **Informal discussions**
  - **Typically one meeting a year outside North America**
  - **Policy is to meet where our active participants are**
- **Occasional interim meetings of busy WGs**
- **Detailed work is done by email**
  - **Meetings set direction and resolve disagreement**
  - **Drafts are reviewed in detail on the mailing list**
  - **Email participants contribute fully**

# IETF Workflow



# IETF working methods

## ■ Open:

- *anyone* can join any WG
- drafts are public
- final documents (RFCs) are free

## ■ Consensus:

- WG decisions are taken using email by *rough consensus*, with no formal vote
- Final review and approval by IESG

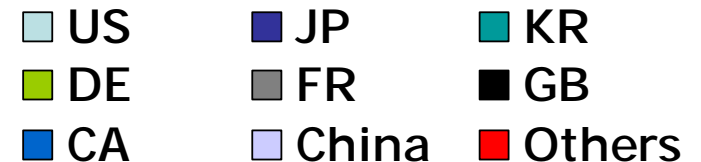
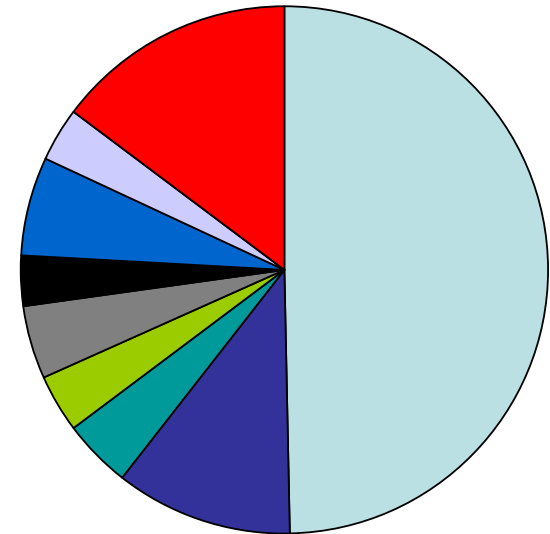
## ■ Self governance:

- active individual participants pick the IESG and IAB
- no corporate or individual formal membership

# IETF participation

- **Open: anyone can join**
  - no formal membership
  - national boundaries do not exist for the IETF
  - email participation is welcome

1238 people from 40 countries at Vancouver IETF in November 2005



# IETF engineering

- **Technical correctness is more important than the preferences of any vendor**
- **Solution must be practical, not perfect**
- **Full standardization requires independent interoperable implementations (*running code*)**
- **We cooperate on engineering matters with other standards bodies and with bodies such as Regional Internet Registries and ICANN**

# Examples of external cooperation

- *The IETF deals with other standards bodies and with bodies such as Regional Internet Registries and ICANN.*
- XML Digital Signature is IETF/W3C joint standard
- IETF recommends ISO 10646 character sets
- IETF present at ITU-T workshop on NGN in May 2005
- IAB discusses with the RIRs about IPv6 address allocation policy
- IMS usage of SIP is fully aligned with IETF SIP standards, through 3GPP and 3GPP2 liaisons
- *Cooperation is the best way to resolve alternative proposals in different standards bodies.*

# Areas of activity

- **General Applications**

  - **Middleware, naming, directories (LDAP), email**

- **Real Time**

  - **Multimedia, SIP, VoIP, instant messaging**

- **Transport layer**

  - **Transport protocols, quality of service,**

- **Internet layer**

  - **IPv6, IP over various media, Mobile IP, VPNs, DNS, DHCP**

- **Routing**

  - **BGP4, OSPF, MPLS, etc**

- **Operations and Management**

  - **Operational aspects & network management**

- **Security**

  - **IPSEC, IKE, PKI, SSL/TLS, etc.**

# Some major current efforts (1)

- IPv6: The IETF has developed IPv6 standards since 1994. The main work is finished, but we expect coexistence with IPv4 and various improvements to continue for many years.
  - IPv6 multihoming (shim6 WG) is in progress
  - Tunnel setup (softwire WG) is a new effort
- Mobility: Several WGs work on mobility, especially for IPv6
- VPNs and Pseudo-wires: Multiple efforts to specify how virtual private networks and emulated transports are carried over IP backbones.
  - includes L2VPN, L3VPN, PWE3 WGs

## Some major current efforts (2)

- Real Time Applications and Infrastructure:
  - Audio/Video, Conferencing, Instant Messaging, VoIP, SIP, ENUM, Geolocation, Emergency Preparedness
- Signalling, QOS and traffic engineering: Work continues on signalling protocols, quality of service, and traffic engineering mechanisms.
  - NSIS WG
  - Traffic engineering for MPLS

# Some major current efforts (3)

- Internationalization:

- Basic character set work is left to Unicode and ISO
- The IETF works on internationalization of protocols and names, and on language tags for content

- ATOM feeds:

- Atom defines a feed format for representing Web resources, and a protocol for editing them

- Calendaring and Scheduling Standards

- LDAP updates

# Some major current efforts (4)

- Security and AAA:
  - GSS-API Next Generation
  - Integrated Security Model for SNMP
  - "Better than Nothing" security - IPsec support for unauthenticated security associations
  - RADIUS extensions, DIAMETER
- Much more: important topics in several IETF areas such as routing, management (NETCONF) and operations are not described.
- Maintenance and enhancement of existing standards

# Current challenges

## ■ Internal:

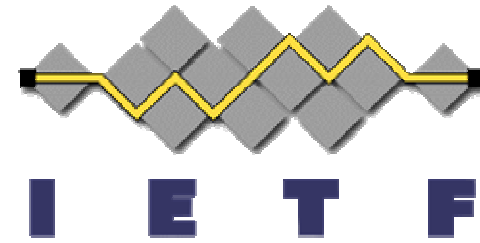
- Overworked volunteers
- Consensus method makes process reform very hard
- A few participants have difficulty accepting the "rough" part of rough consensus

## ■ External:

- Deployed base makes innovation harder
- Some industry players find open IETF ethos threatening
- Patent farmers
- Hard to attract operations community to fully participate
- Other SDOs not always respecting boundaries
- Always the threat of misguided regulations



# Summary



**327 RFCs were published in 2005. We must be doing something right.**

- **The IETF is a vigorous, international, open standards organisation**
  - **It continues to develop and maintain the basic standards for the global Internet**
  - **It is open to every engineer in the world, by email or by attending meetings**
- **You are most welcome at**

**<http://www.ietf.org>**