

Engineering the Internet's Future for 25 years.

IETF

Internet Engineering Task Force

www.ietf.org

Internet Engineering Task Force



Development of open, consensus-based Internet standards

The mission of the IETF is to produce high quality, relevant technical and engineering documents that influence the way people design, use, and manage the Internet in such a way as to make the Internet work better. These documents include protocol standards, best current practices, and informational documents of various kinds.

RFC3935 – A Mission Statement for the IETF

IETF Open Standards

While the mission of the IETF is to make the Internet work better, no one is “in charge” of the Internet. Instead, many people cooperate to make it work. Each person brings a unique perspective of the Internet, and this diversity sometimes makes it difficult to reach consensus. Yet, when consensus is achieved, the outcome is better, clearer, and more strongly supported than the initial position of any participant.

IETF Open Standards

Building blocks for Internet innovation

- Ensure interoperability between independent implementations
- Above the wire and below the application

Freely accessible

- Without fee or contractual agreement

Unencumbered

- No undue licensing fees or restrictions

Developed through open and inclusive process

- Low threshold for participation
- People, not companies
- Consensus based

Always evolving

- Addressing new needs and requirements

IETF standards make the Internet work

Basic protocol suit TCP/IP

- IPv4 (RFC791) and IPv6 (RFC2460...)
- TCP (RFC675...) and UDP (RFC768)

E-Mail

- SMTP (RFC5321)

Network and Routing

- MPLS (RFC3031...) and BGP (RFC4271)

...

DNS (RFC1034,1035...)

Web

- HTTP (RFC2616...)

VoIP

- SIP (RFC3261...) and RTP (RFC3550...)

...

A quick overview of the IETF

The Internet Engineering Task Force is a loosely self-organized group of people who contribute to the engineering and evolution of Internet technologies. It is the principal body engaged in the development of new Internet standard specifications.

RFC4677 – The Tao of IETF

Principles of the IETF

Open process

Technical competence

Volunteer core

Rough consensus and running code

Protocol ownership

How the IETF works

High-quality standards

- Experts, not organizations
- Open and consensus based

Areas and Working Groups

- Mailinglists with open membership
- Most of the work is done on-line, including decisions
- 3 face-to-face meetings with remote participation

Working specifications and standards freely available

- <http://www.ietf.org/rfc.html>

Maintenance responsibility

- Standards track

IETF by numbers

1000-2000 people at 3 meetings/year

- From 40-50 different countries
- Many, many more on mailing lists

~120 Working Groups (WGs)

- 2 WG chairs each

8 Areas with 15 Area Directors (ADs)

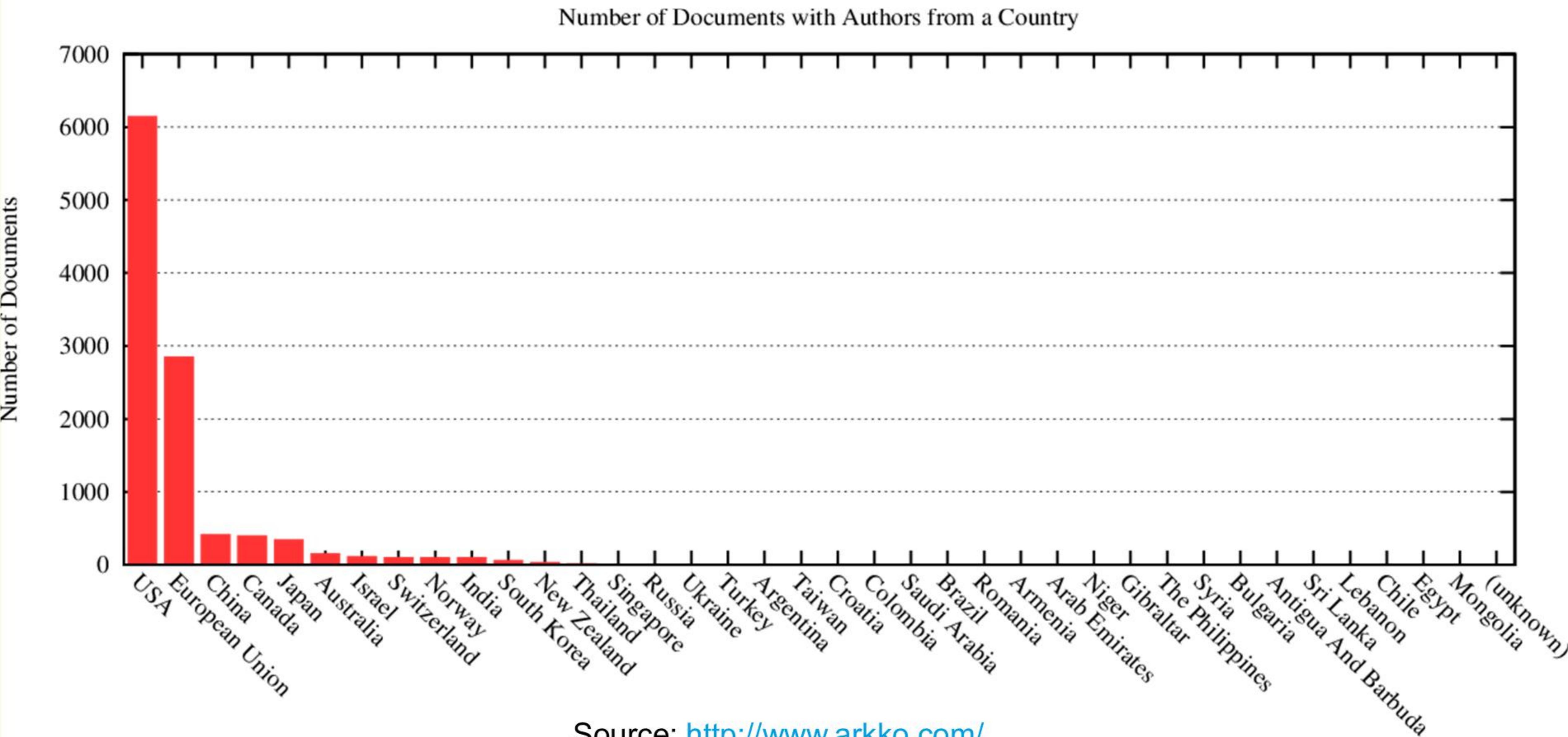
More than 6300 RFCs published

- Internet Standards and informational documents

More than 50000 Internet Draft revisions submitted

IETF by numbers: contribution

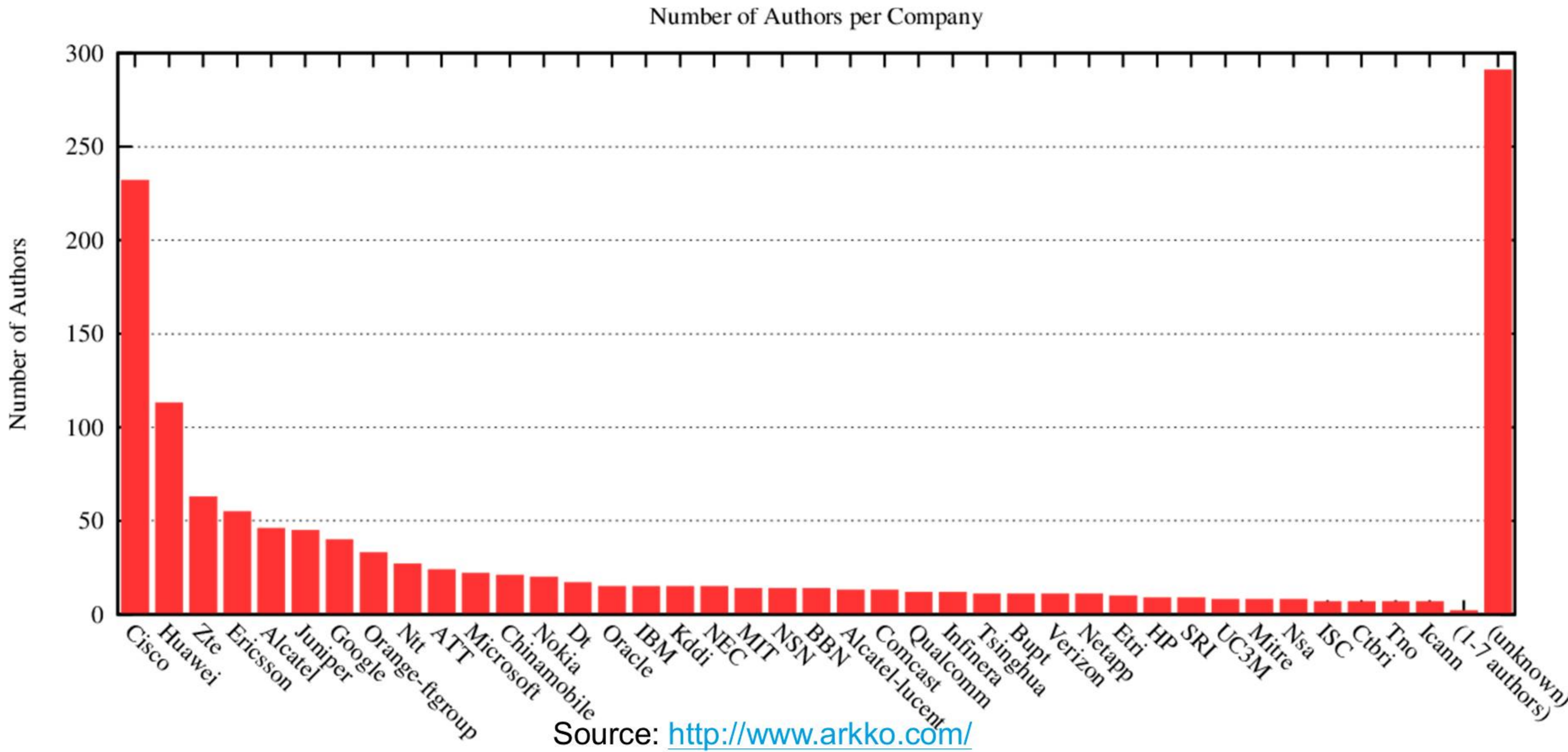
Distribution of documents by country



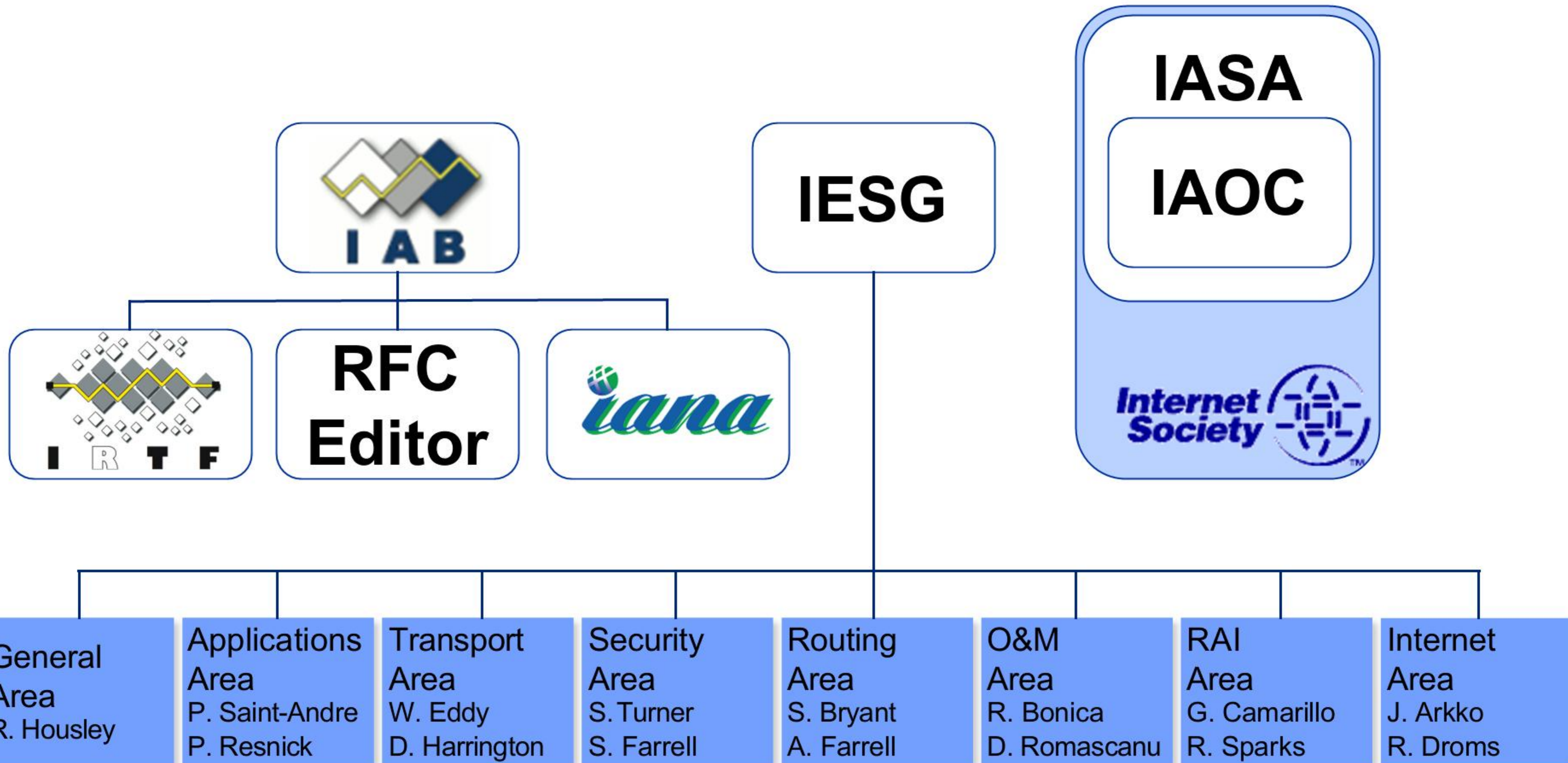
Source: <http://www.arkko.com/>

IETF by numbers: contribution

Most active IETF participants Internet Drafts by company



Top-level organizational view



IETF Standards development process

Chair establishes consensus then requests publication of ID as RFC

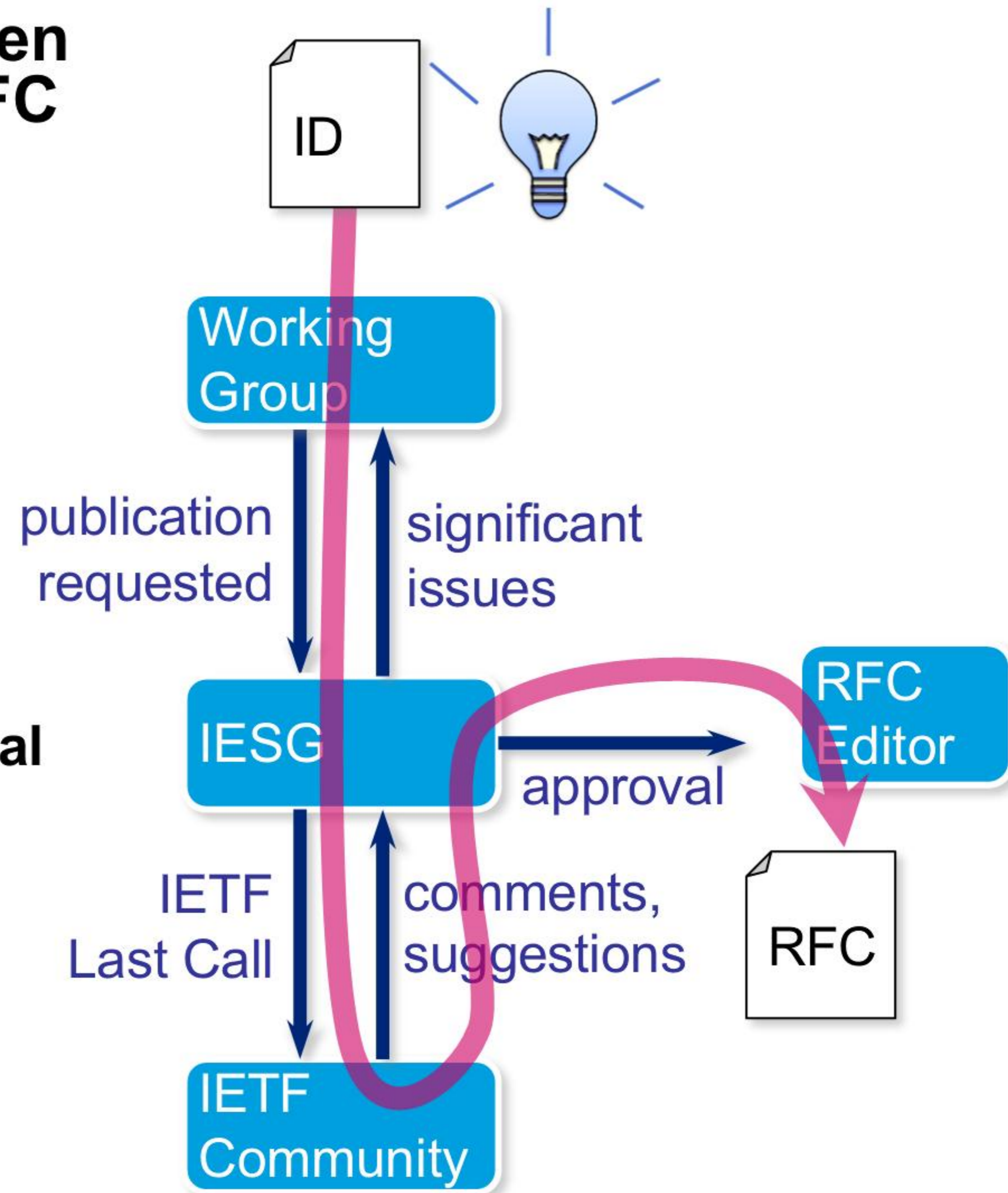
- ID review by responsible AD
- Can be sent back to WG

IETF-wide “Last Call”

IESG review

- Last Call comments & own technical review
- Can be sent back to WG

IESG approval followed by publication as RFC



Contributing new work

Check WG charters & approach chairs to ask their opinion



Submit an ID to the WG



- Read RFC5378 (IPR + copyright)

- draft-yourname-wgname-topic-00

Ask for feedback on ID on WG mail list



Ask for time during an IETF meeting



- Constructively incorporate feedback (“revise quickly, revise often”)

Eventually, ask to adopt as WG draft



Continue work in WG



- Note: you now become editor

Initiating new work in the IETF

Identify need

- **Birds of a Feather (BOF) Session often used to demonstrate the need, a constituency, and people willing to do the work**
- **Compose a draft charter for the Working Group**

Organize Working Group

- **Working Group charter approved by the IESG**
- **Open mail list discussions and open meetings**

Organize work

- **Produce documents according to the milestones**

IETF Organization – Areas

General Area R. Housley	Applications Area P. Saint-Andre P. Resnick	Transport Area W. Eddy D. Harrington	Security Area S. Turner S. Farrell	Routing Area S. Bryant A. Farrell	O&M Area R. Bonica D. Romascanu	RAI Area G. Camarillo R. Sparks	Internet Area J. Arkko R. Droms
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8 Areas to structure the technical work:

General	(GEN)
Applications	(APP)
Transport Services	(TSV)
Security	(SEC)
Routing	(RTG)
Operations & Management	(O&M)
Real-Time Applications and Infrastructure	(RAI)
Internet	(INT)

IETF Organization – IESG

Internet Engineering
Steering Group (IESG)
15 Area Directors

General Area R. Housley	Applications Area P. Saint-Andre P. Resnick	Transport Area W. Eddy D. Harrington	Security Area S. Turner S. Farrell	Routing Area S. Bryant A. Farrell	O&M Area R. Bonica D. Romascanu	RAI Area G. Camarillo R. Sparks	Internet Area J. Arkko R. Droms
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The Internet Engineering Steering Group (IESG) is the process management and RFC approval body

Formed by all 15 ADs

Approves all WG creations

Provides technical review

Approves publication of IETF documents

Reviews and comments on non-IETF-stream submissions

IETF Organization – IAB



Internet Architecture Board (IAB)

13 Members

Internet Engineering Steering Group (IESG)

15 Area Directors

General Area

R. Housley

Applications Area

P. Saint-Andre
P. Resnick

Transport Area

W. Eddy
D. Harrington

Security Area

S. Turner
S. Farrell

Routing Area

S. Bryant
A. Farrell

O&M Area

R. Bonica
D. Romascanu

RAI Area

G. Camarillo
R. Sparks

Internet Area

J. Arkko
R. Droms

The Internet Architecture Board (IAB) provides overall architectural advice & oversight

Standards Process Oversight and Appeal

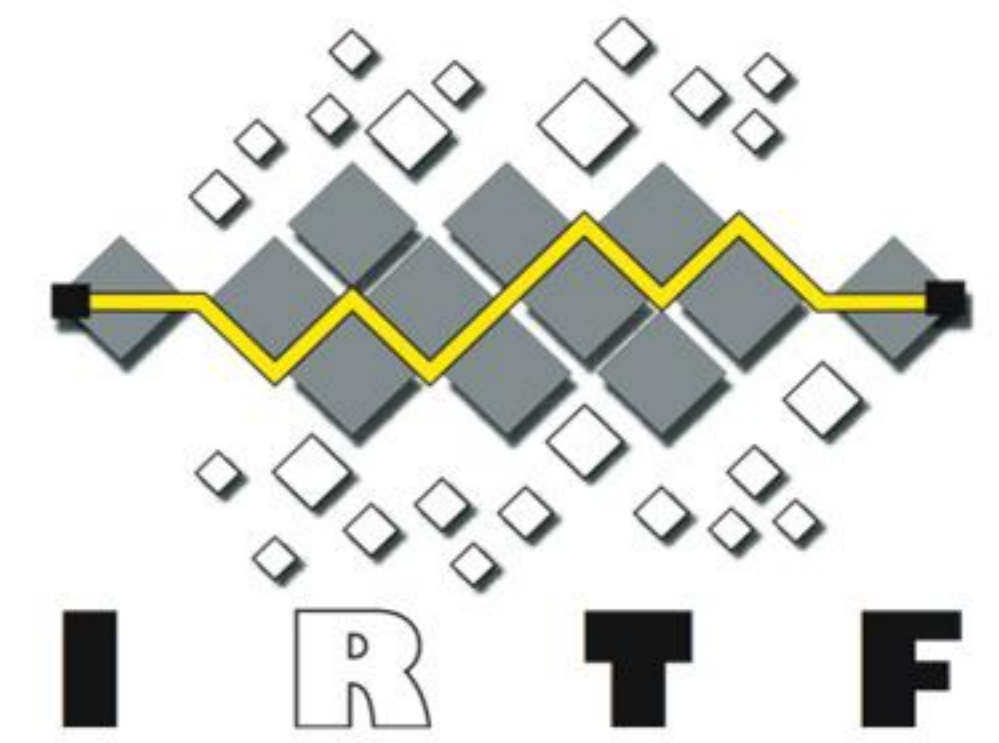
Architectural Oversight

RFC Series and IANA

External Liaison

IESG confirmation and selection of IRTF Chair

IETF Organization – IRTF



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Internet Research Task Force
L. Eggert

Internet Research Task Force (IRTF)

Focused on long-term research problems in Internet

Anti-Spam	(ASRG)		
Crypto Forum	(CFRG)	Peer-to-Peer	
Delay-Tolerant Networking	(DTNRG)		(P2PRG)
Host Identity Protocol	(HIPRG)	Routing	
Internet Congestion Control	(ICCRG)		(RRG)
IP Mobility Optimizations	(MOBOPTS)	Transport Modeling	(TMRG)
Network Management	(NMRG)	Scalable Adaptive Multicast	(SAMRG)
		Virtual Networks	(VNRG)

IETF Organization – All WGs



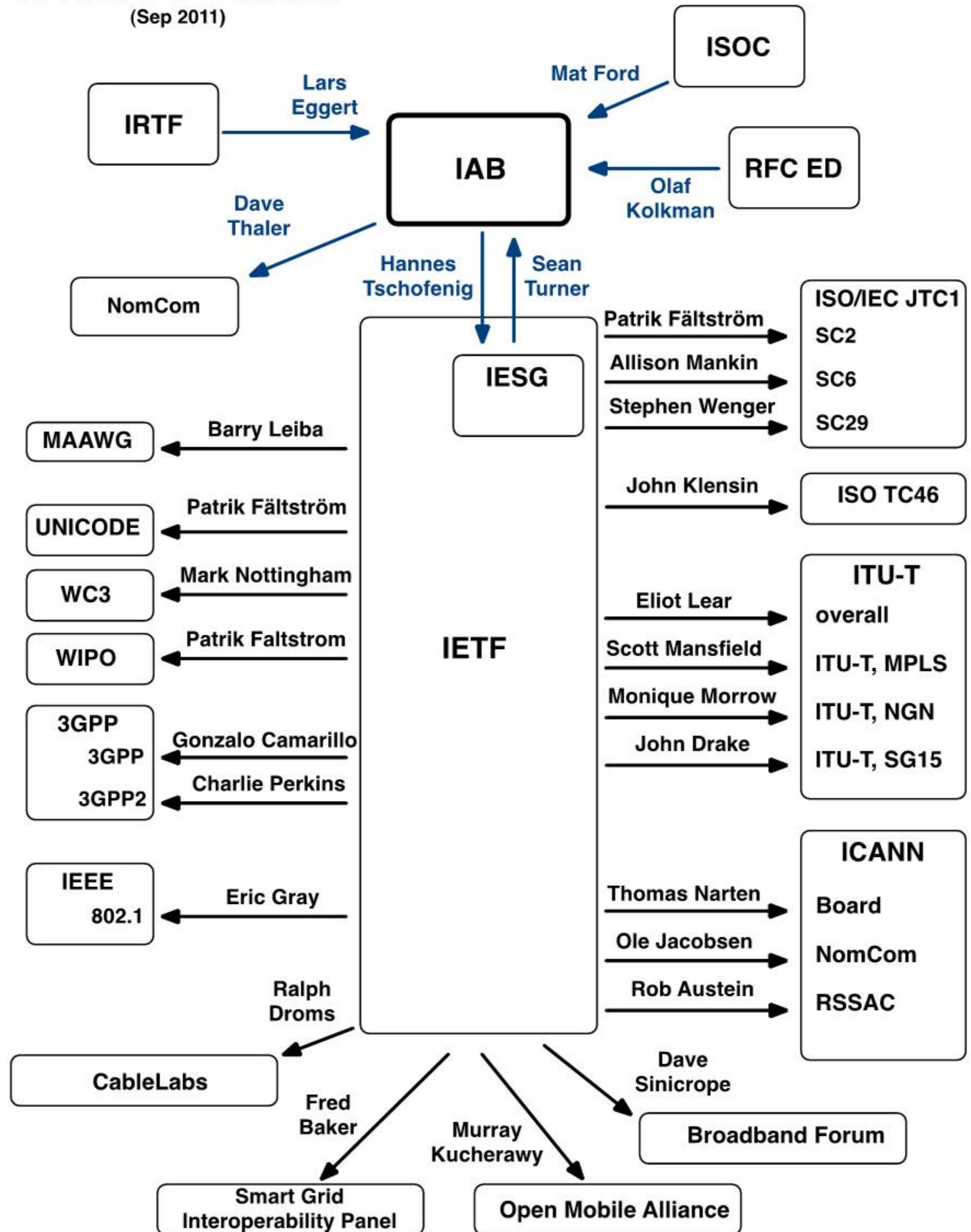
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	appsawg core eai ftpext2 httpbis hybi iri marf paws precis sieve urnbis vcarddav websec yam	alto behave cdni conex dccp decade fecframe ippm ledbat mptcp nfsv4 pcn ppsp rmt storm tcpm tsvwg	abfab dane dkim emu hokey ipsecm kitten krb-wg msec nea oauth pkix tls	bfd ccamp forces idr isis karp l2vpn l3vpn manet mpls ospf pce pim pwe3 roll rtgwg sidr	6renum adslmib arnd bmwg dime dnsop eman grow ipfix mboned netconf netmod opsawg opsec radext v6ops	atoca avtcore avtext bliss clue codec cuss dispatch drinks ecrit geopriv mediactrl mmusic p2psip payload rtcweb salud simple sipclf sipcore siprec soc speechsc speermint splices vipr xcon xmpp xrblock	6lowpan 6man ancp autoconf csi dhc dnsex hip homenet intarea l2tpext lisp lwig mext mif mip4 multimob netext ntp pcp pppext savi software tictoc trill
Internet Research Task Force L. Eggert							
asrg cfrg dtnrg hiprg iccr mobjo nmrg P2prg rrg samrg tmrg vnrg							

IETF and other organizations

IAB and IETF Liaisons
(Sep 2011)



Summary

IETF makes the Internet work better

- **Fundamental role in Internet evolution**

Participation is critical to the success of the IETF

- **International scope, local relevance**

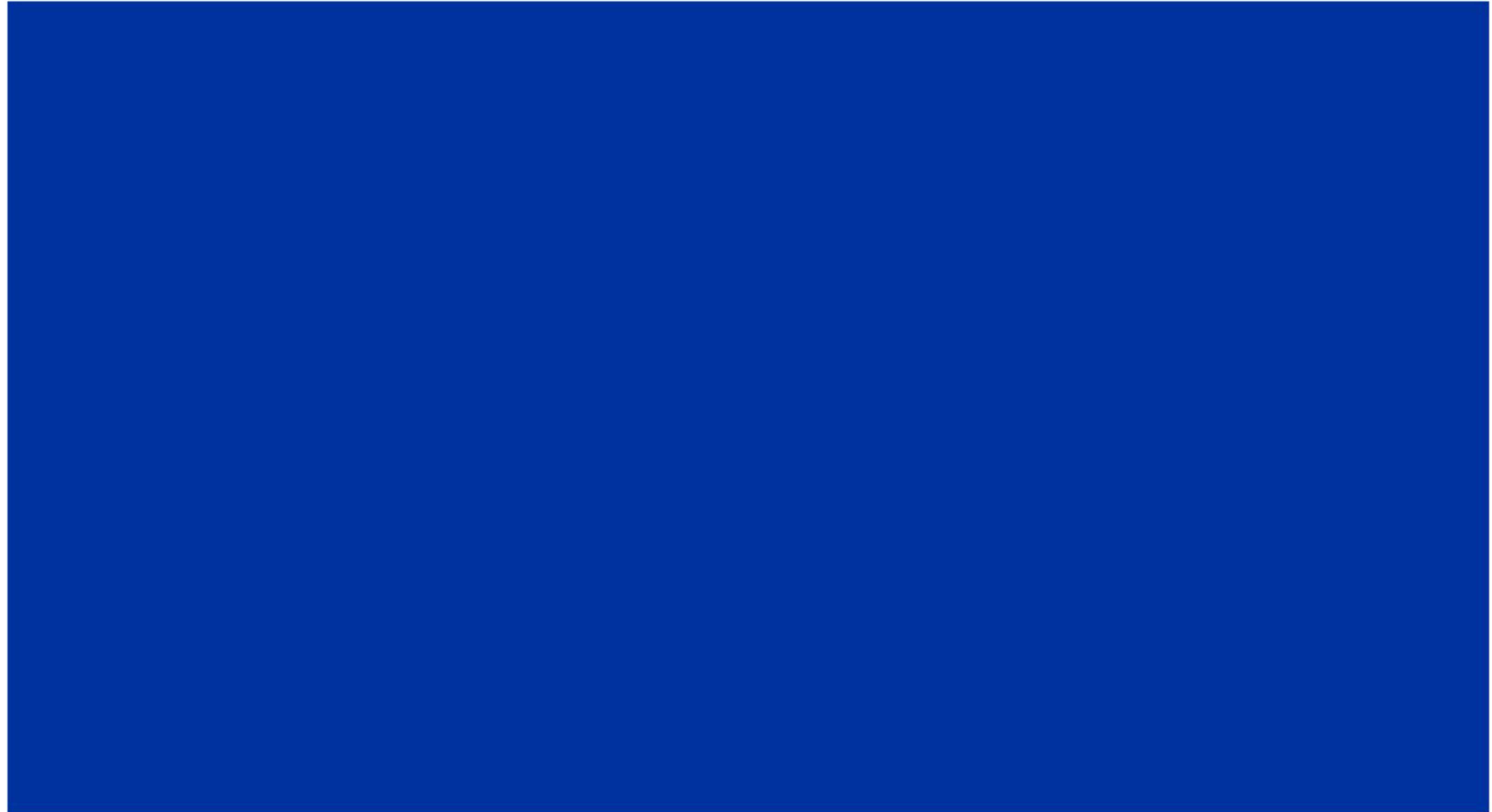
Open, inclusive, well established structure

- **Evolving together with the Internet**

More information

- www.ietf.org

access address algorithm application architecture authentication control data definitions dns draft
extensions generic host iab initiation interface internet ip ipv6 key layer mail
management message mib mobile mpls multicast name network objects option pdf
postel **protocol** requirements resource rfc routing rtp security service
session simple sip specification system tcp transport



IETF IPR (patent) rules (in RFC 3979)

Require timely disclosure of your own IPR in your own submissions & submissions of others

- disclosures published on IETF web site

‘reasonably & personally’ known to the WG participant

- i.e., no patent search required

WG may take IPR into account when choosing solution

- RFC3669 gives background and guidance

Push from open source community for RF-only process

- consensus to not change to mandatory RF-only
- but many WGs tend to want RF or IPR-free

Copyright

Author(s) need to give non-exclusive publication rights to IETF Trust to have their work published

- **also (normally) the right to make derivative works**
- **author(s) retain all other rights**

Updated by RFC 5378

- **expanded rights granted to IETF Trust**
- **issue with text copied from older IDs and RFCs**

IETF Trust released a FAQ on IETF copyright

- **see <http://trustee.ietf.org/faqs.html>**