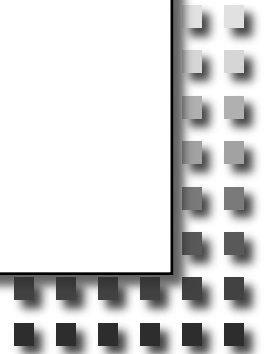




IETF Structure and Internet Standards Process

*Margaret Wasserman
60th IETF
San Diego, CA*





The IETF

Internet Engineering Task Force

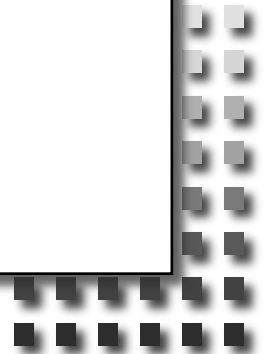
Formed in 1986

Was not considered important for a long time -
good!!

Not government approved - great!!

People not companies

“rough consensus and running code”



IETF Overview

IETF has **no** members, **no** voting

1,200 to 2000 at 3/year meetings, **more** on mail lists

130ish **working groups** (where real work happens)

If it matters to the Internet, it matters to us

8 **areas** (for organizational convenience)

APS, GEN, INT, O&M, RTG, SEC, SUB, TSV

SUB “temporary” since 2001, almost finished now

Management: **IESG** (ADs, chosen by community)

Architectural guidance & liaisons: **IAB (also chosen)**

Produces **standards** and other **documents**





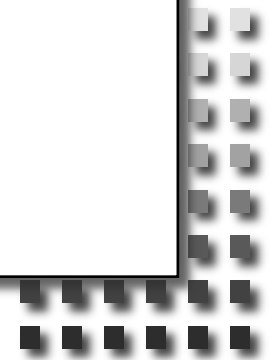
IETF “Standards”

IETF standards not standards “because we say so”

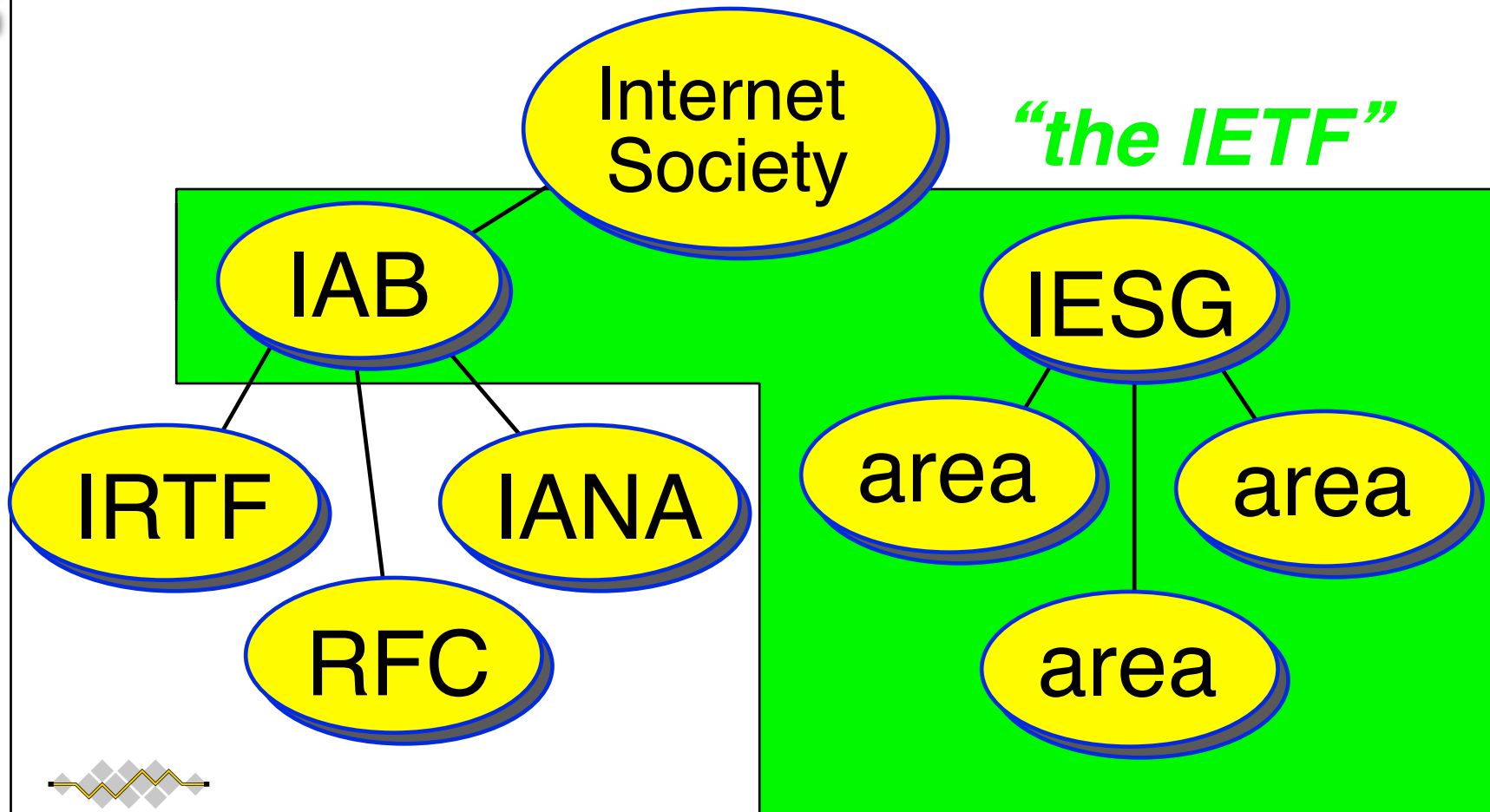
Only standards when people **use** them

No formal recognition

No submitting to “traditional” standards bodies



Organization of the IETF





Internet Society (ISOC)

Non-profit, non-governmental, international,
professional membership organization

150 organization and 16,000 individual members in over 180
countries

Provides organizational home for IETF

Legal umbrella, insurance, etc.

ISOC BoT part of IETF appeal chain

ISOC president appoints chair of IETF nomcom

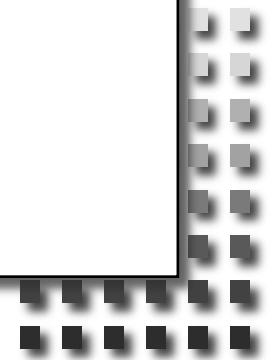
IAB chartered by ISOC

ISOC president is on the IAB mailing list & calls

IETF (through IAB) appoints 3 ISOC trustees



join at www.isoc.org





Internet Research Task Force (IRTF)

Focused on **long term** problems in Internet

Some examples:

- Anti-Spam
- Delay-Tolerant Networking
- End-to-End
- Internet Measurement
- Network Management
- Routing

For more information see <http://www.irtf.org>





Internet Architecture Board (IAB)

Provides overall **architectural advice** to IESG,
IETF & ISOC

Advises IESG on IETF working group formation

Deals with IETF external liaisons

Appoints IRTF chair

Selects IETF-IANA

Oversees RFC Editor

Hosts workshops

Chartered by ISOC

IAB plenary session Wednesday night



IAB Members

Bernard Aboba

Rob Austein

Harald Alverstrand

IETF Chair

Leslie Daigle

IAB chair

Patrik Fältström

Sally Floyd

Mark Handley

Bob Hinden

Geoff Huston

Jun-ichiro Itojun Hagino

Eric Rescorla

Pete Resnick

Jonathan Rosenberg



I E T F



Internet Assigned Number Authority (**IANA**)

Assigns parameters and keeps them from colliding

- protocol numbers
- IP addresses
 - mostly delegated to IP Address registries
- domain names
 - mostly delegated to DNS name registries

Functions split with the creation of **ICANN**

- Internet Corporation for Assigned Names and Numbers
- Independent corporation to take over IANA functions
- Contract with US government
- Now **IETF-IANA** and non-IETF-IANA



RFC Editor

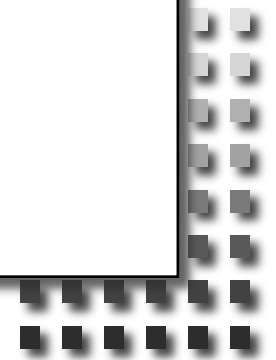
Historically Jon Postel and helpers

Now a small group funded by ISOC

– rfc-editor@rfc-editor.org

Semi-independent

- Gets requests to publish IETF IDs from IESG
- Gets requests to publish independent IDs for info or exp RFCs
 - asks IESG for advice on publishing independent RFCs
 - but can exercise own discretion
 - presumption is to publish technically competent IDs
 - which sometimes is a conflict with IESG



IETF Chair

Harald Alvestrand <harald@alvestrand.no>

also chair of **IESG**

also director of **General Area**

also ex officio member of **IAB**

Nominated by IETF community - this includes you

Selected by nomcom

IETF's "CTO" - "Chief Talking (or Traveling)
Officer"





Area Directors (**ADs**)

Nominated by the community – this includes you

Selected by nomcom

Responsible for **setting direction** in Area

Responsible for **managing process** in Area

- approve BOFs & working group charters
- then go to IESG & IAB for final approval

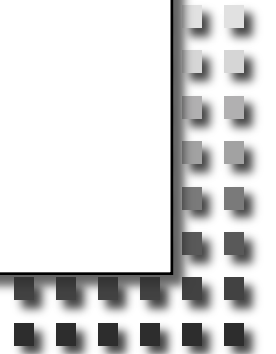
Reviews working group documents

Most Areas have 2 ADs

- all but General Area



I E T F





Internet Engineering Steering Group (**IESG**)

IETF Chair + rest of ADs

IETF **process management and RFC approval** body

Approves WG creation

Reviews & approves publication of IETF documents

– reviews and comments on non-IETF submissions

Multi-disciplinary technical review group

Subject of IESG plenary session Wednesday night



IETF Areas

IETF Chair & IESG Chair & AD for General Area (gen)

Harald Alvestrand <chair@ietf.org>

Applications (app)

Scott Hollenbeck <shollenbeck@verisign.com> (new since IETF 58)

Ted Hardie <hardie@qualcomm.com>

Internet (int)

Thomas Narten <narten@us.ibm.com>

Margaret Wasserman <margaret@thingmagic.com>

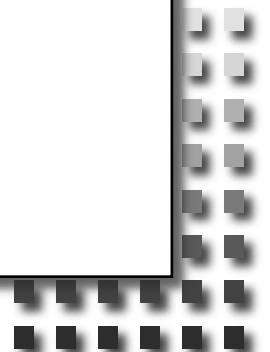
Operations & Management (ops)

David Kessens <david.kessens@nokia.com>

Bert Wijnen <bwijnen@lucent.com>



I E T F





IETF Areas (cont.)

Routing (rtg)

Bill Fenner <fenner@research.att.com>

Alex Zinin <zinin@psg.com>

Security (sec)

Steve Bellovin <smb@research.att.com>

Russ Housley <housley@vigilsec.com>

SUB-IP (sub) - Ad Hoc Area

Bert Wijnen <bwijnen@lucent.com>

Alex Zinin <zinin@psg.com>

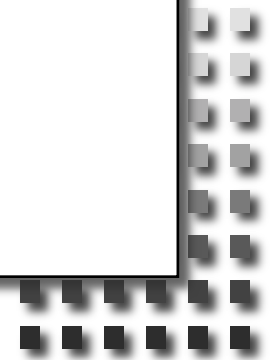
Transport Services (tsv)

Allison Mankin <mankin@psg.com>

Jon Peterson <jon.peterson@neustar.biz>



I E T F





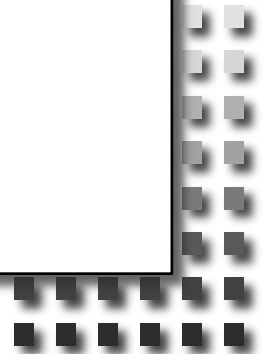
IETF Secretariat

Organizes/Coordinates

- plenary meetings
- mailing lists hosted by IETF
- Internet-Draft directory
- IESG teleconferences
- day to day work of IESG and working groups

Provided by Foretec – Reston, Virginia

Funded from IETF meeting fees





Selecting IETF Management

IESG & IAB members normally have 2-year terms

Picked by a nominations committee (**nomcom**)

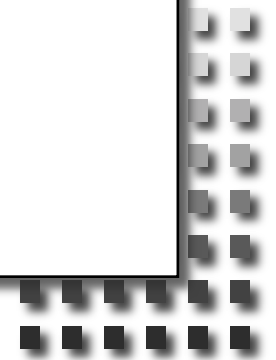
- nomcom chair appointed by ISOC president

nomcom selects community nominees for each job







- reviews one half IESG, half IAB each year
- includes IETF chair
- IESG approved by IAB, IAB approved by ISOC BoT

nomcom selected **randomly** from list of volunteers

- volunteers have to have been at 2 of last 3 IETF meetings
- **very** random selection process (RFC 3777 describes “random”)



Dots

-  IAB member (red)
-  IESG member (yellow)
-  Working Group chair (blue)
-  nomcom (orange) – they came to listen to you...
-  Local host (green)
-  People who are willing to help!



I E T F



Working Groups

This is where the IETF primarily get its work done
Working group focused by charter agreed between
chair(s) and area director

- **restrictive** charters with deliverables and **milestones**
- working groups **closed** when their work is done

Charter approved by IESG with IAB advice

AD with IESG has final say on charter & chair(s)



Working Groups (continued)

“**rough consensus** and running code...”

No formal voting

- can do show of hands or hum

Does **not** require unanimity

Disputes resolved by discussion

Mailing list and face-to-face meetings

- most work happens on mailing lists
- all decisions must be verified on mailing list
- face-to-face discussion to resolve disagreements



I E T F





IETF Documents

All **open** - no “confidential contributions”

Developed as Internet-Drafts

- **anyone** can submit - “expire” in 6 months
- **some** I-Ds are working group documents

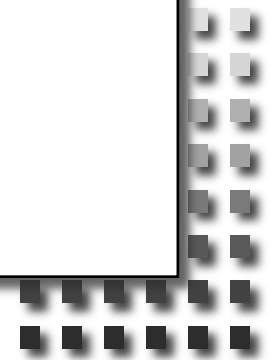
Published as RFCs

- archival publications (never changed once published)
- different types: (not all RFCs are standards!)
 - informational, experimental, BCP, standards track, historic

3-stage standards track, under review in NEWTRK

Proposed Standard, Draft Standard, Internet Standard

Interoperability not conformance





What is a RFC?

IETF document publication series

RFC used to stand for Request for Comments

- now just a name
- now tend to be more formal documents than early RFCs

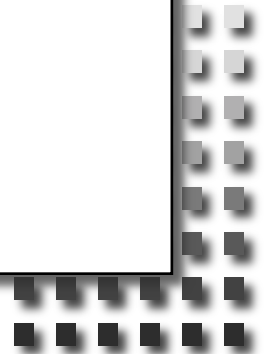
Now nearly 3700 RFCs

- RFC 1 *Host Software* - Apr 7 1969

“**Not all** RFCs are standards”

- see RFC 1796
- though some vendors imply otherwise

Many types of RFCs





RFC Repository Contains:

Standards track

OSPF, IPv6, IPsec ...

Obsolete Standards

RIPv1

Requirements

Host Requirements

Policies

Classless InterDomain Routing

April fool's day jokes

IP on Avian Carriers ...



I E T F

... updated for QoS

Poetry

'Twas the night before startup

White papers

On packet switches with infinite storage

Corporate documentation

Ascend multilink protocol (mp+)

Experimental history

Netblt

Process documents

IETF Standards Process





Working Documents

Internet-Draft

- input to the process or for background information
- **no admissions control** other than IPR statements
- anyone can submit an ID
- **zapped** from IETF directory after 6 months
 - but many mirrors exist
- almost all RFCs must pre-exist as IDs
 - some RFCs created by IANA or RFC Editor - exceptions



Standards Track RFCs:

Start at Proposed Standard (**PS**)

good idea, no known problems

implementation required at AD discretion

Advance to Draft Standard (**DS**)

stable Proposed Standard specification

multiple interoperable implementations

note IPR restriction

Advance again to Internet Standard (**STD**)

Draft Standard with wide deployment and use

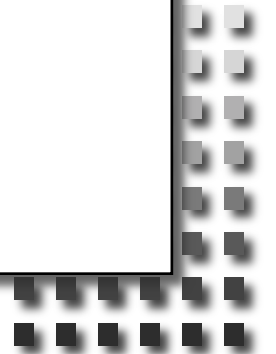
Best Current Practices (**BCP**)

generally policies or IETF procedures

(best way we know how)



I E T F





IETF Standards Process

Specification published as Internet Draft

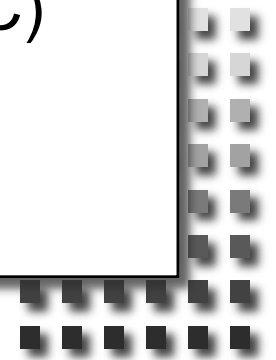
Discussed in a working group - creates revised IDs

ID sent to IESG after working group consensus

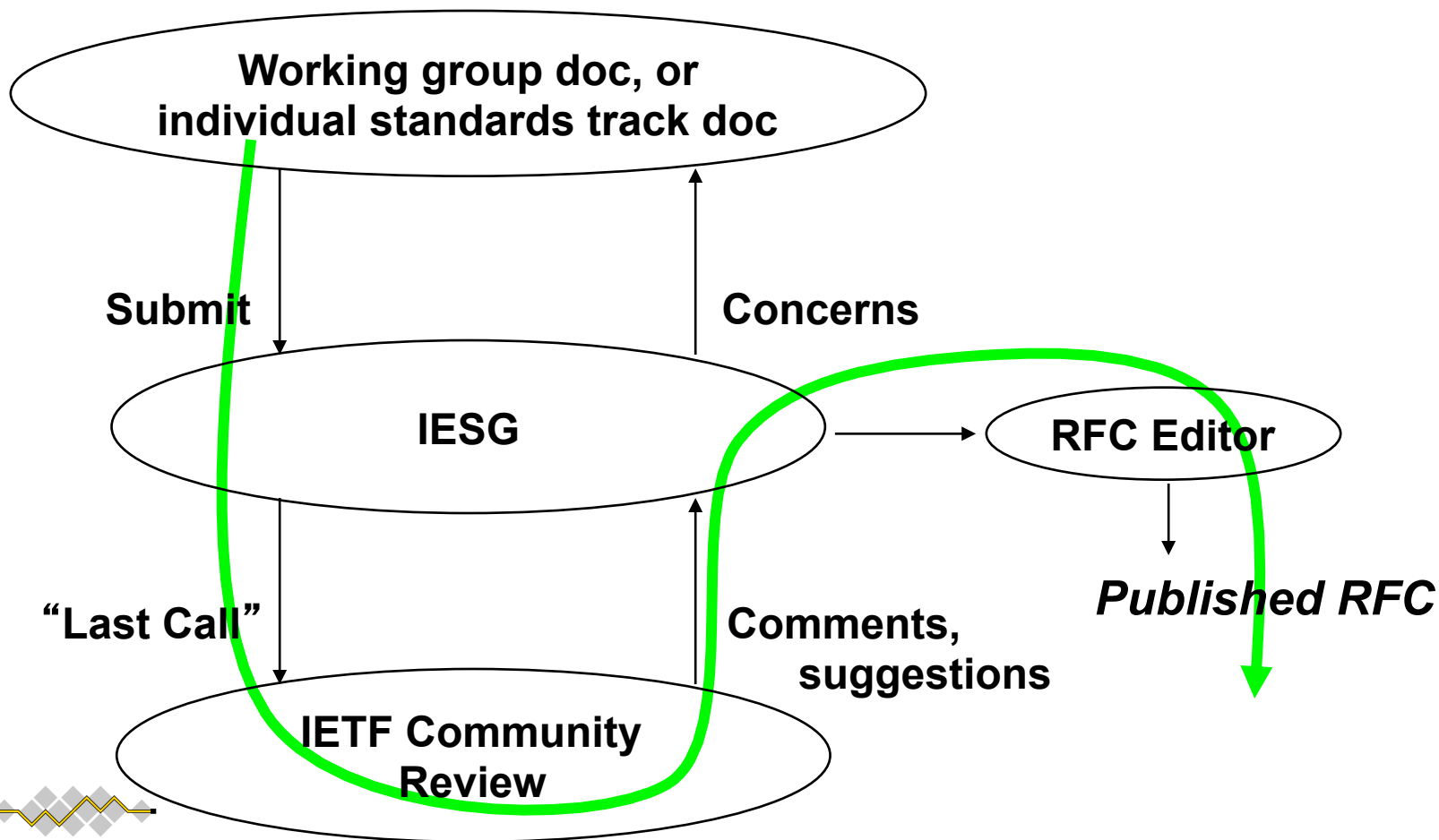
IESG issues **IETF Last Call** (2 weeks)

- anyone can comment
- IESG considers comments and its own review
 - may approve publication as standards track RFC
 - may point out issues to working group & return ID

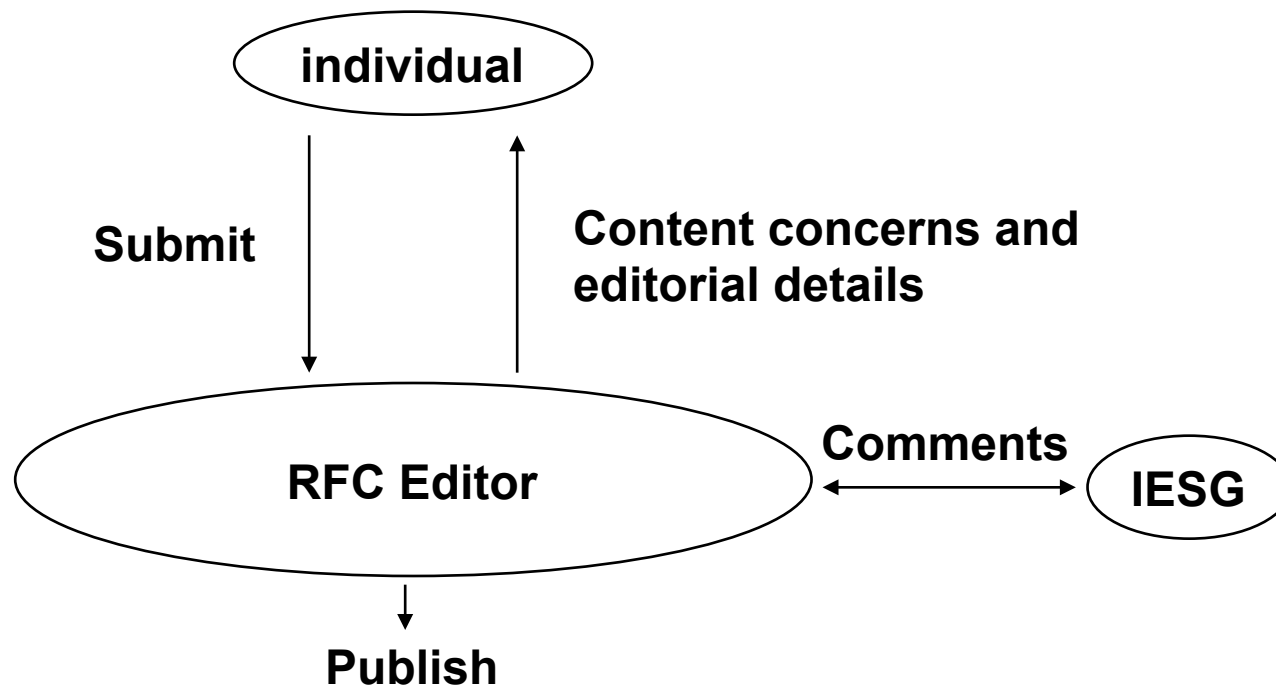
Similar process for non-WG drafts (with 4-week LC)



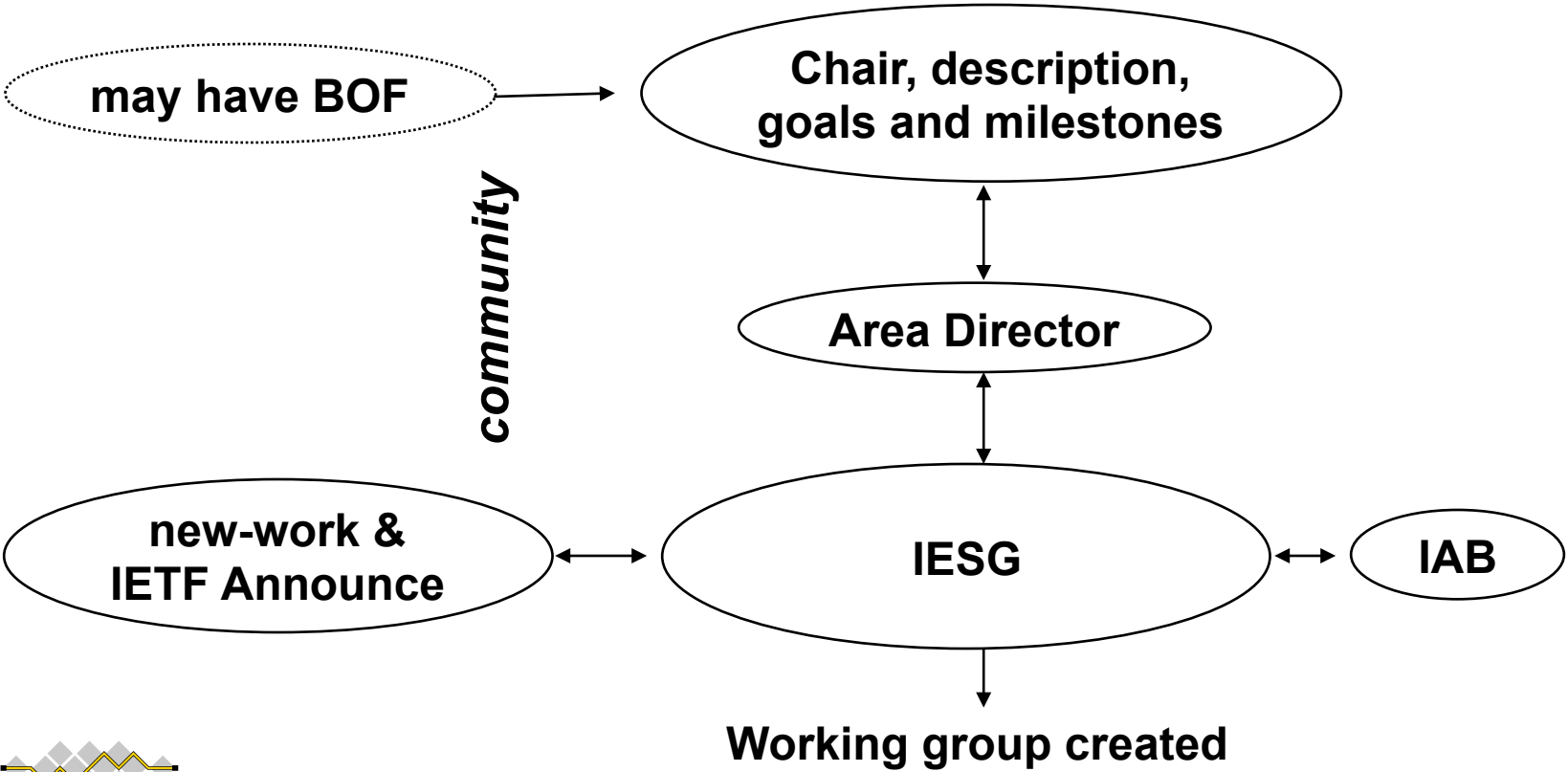
IETF Submission



Non-IETF Submissions



Working Group Creation



Appeals Process

IETF decisions can be appealed

start level above decision being appealed

1st to WG chair

Only then to Area Director

Only then to IESG

Only then to IAB

If claim is that **the process** has not been followed,

only then an appeal can be made to the ISOC Board

It is OK to appeal decisions – people do

but appeals are not quick

starting “low” is the right thing to do



I E T F



IPR (Patents)

IETF IPR rules in RFC 3667, 3668

Current IETF rules

require **disclosure** of your own IPR in
your own submissions & submissions of others
“**reasonably and personally**” known IPR
no patent search required

WG takes IPR into account when choosing technology

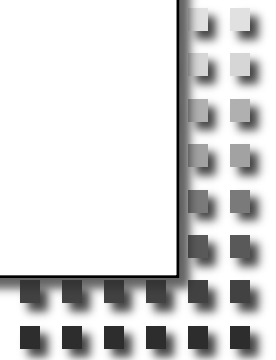
New RFC 3669 gives background and guidance

Push from open source people for RF-only process

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



I E T F



IPR (Copyright)

Author(s) need to give publication rights to ISOC (IETF) if document is to be published at all

But **authors retain** most rights

Mandatory ID statement

1/ subject to RFC 3667

2/ above but no right to produce derivative works

3/ just publish as ID

Recent RFC 2026 updates also clarified copyright
see RFC 3668

Standards track requires IETF change control

“subject to RFC 3667” with no other restrictions



I E T F



Note Well (1)

The “Note Well” statement shows up a lot at the IETF.
Mailing lists, registration, meeting openings, etc.

“Any submission to the IETF intended by the Contributor for publication as all or part of an IETF Internet-Draft or RFC and any statement made within the context of an IETF activity is considered an "IETF Contribution".

continued ...

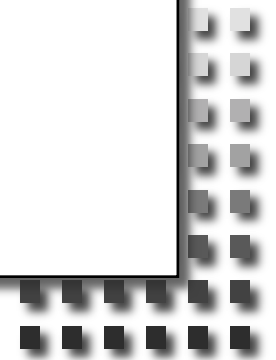


Note Well (2)

“Such statements include oral statements in IETF sessions, as well as written and electronic communications made at any time or place, which are addressed to:

- **the IETF plenary session**
- **any IETF working group or portion thereof**
- **the IESG, or any member thereof on behalf of the IESG**
- **the IAB or any member thereof on behalf of the IAB**
- **any IETF mailing list, including the IETF list itself, any working group or design team list, or any other list functioning under IETF auspices**
- **the RFC Editor or the Internet-Drafts function”**

continued ...



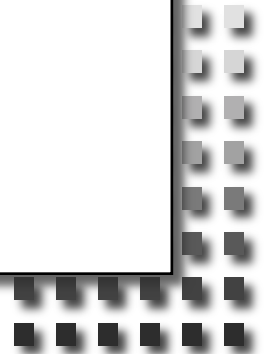


Note Well (3)

“All IETF Contributions are subject to the rules of RFC 3667 and RFC 3668.

Statements made outside of an IETF session, mailing list or other function, that are clearly not intended to be input to an IETF activity, group or function, are not IETF Contributions in the context of this notice.

Please consult RFC 3667 for details.”





Other IETF Training/Tutorials

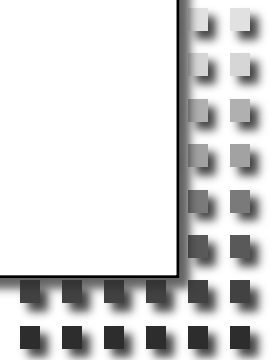
*Provided by EDU-Team at each IETF
see details at <http://edu.ietf.org>*

1300-1500 Editor's Training - Marina 5

1500-1700 Intro WG Chairs Training – Harbor Island II

1500-1700 Security Tutorial - Grande Ballroom A

*1700-1900 Welcome Reception - Harbor Island II
(talking to IETF people is always an education!)*





What next?

Join mailing lists

This is where the work happens

Read the drafts

Don't be shy

Talk to people

Look for common ground

Help people

Don't settle for settle for second-rate



I E T F



Questions?



I E T F