IETF Structure and Internet Standards Process
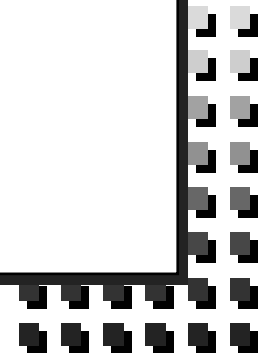
Spencer Dawkins/Changhoon Kim
59th IETF
Seoul, Republic of Korea/Han-gook

I E T F

Note Well (1)

The "Note Well" statement shows up a lot at the IETF.

Mailing lists, registration, meeting openings, etc.

"All statements related to the activities of the IETF and addressed to the IETF are subject to all provisions of *Section 10 of RFC 2026*, which grants to the IETF and its participants certain licenses and rights in such statements."

... continued ...

I E T F

Note Well (2)

"Such statements include verbal statements in IETF meetings, 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 (except for RFC Editor Contributions)."

... continued ...

I E T F

Note Well (3)

"Statements made outside of an IETF meeting, mailing list or other function, that are clearly not intended to be input to an IETF activity, group or function, are not subject to these provisions."

Clearer statement of IETF IPR policy now available in RFC 3667, 3668

Announced 2004/02/18

I E T F

The IETF

Internet Engineering Task Force

formed 1986

other standards groups cooperate with, imitate or fear the IETF (but some still ignore it)

not important enough for a long time - good!!

not government approved - great!!

people not companies

"rough consensus and running code"

I E T F

IETF: Meta View

"IETF does not exist" - **no** members, **no** voting

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

> 1304 & 1201 at last 2 meetings (Vienna & Minneapolis)

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

if it matters to the Internet, standardizing it matters to us

8 **areas** (for organizational convenience) with **AD**s

> 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**

I E T F

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

    some of them keep trying to help

I E T F

Relationships:

liaisons / representatives

    ITU-T, ISO study groups, ATM Forum ...

share people with other organizations

    more effective than formal liaisons

    but confuse other standards organizations

growing area but culture clash

    IETF is mostly bottom-up, loosely managed

    can have competing architectural models

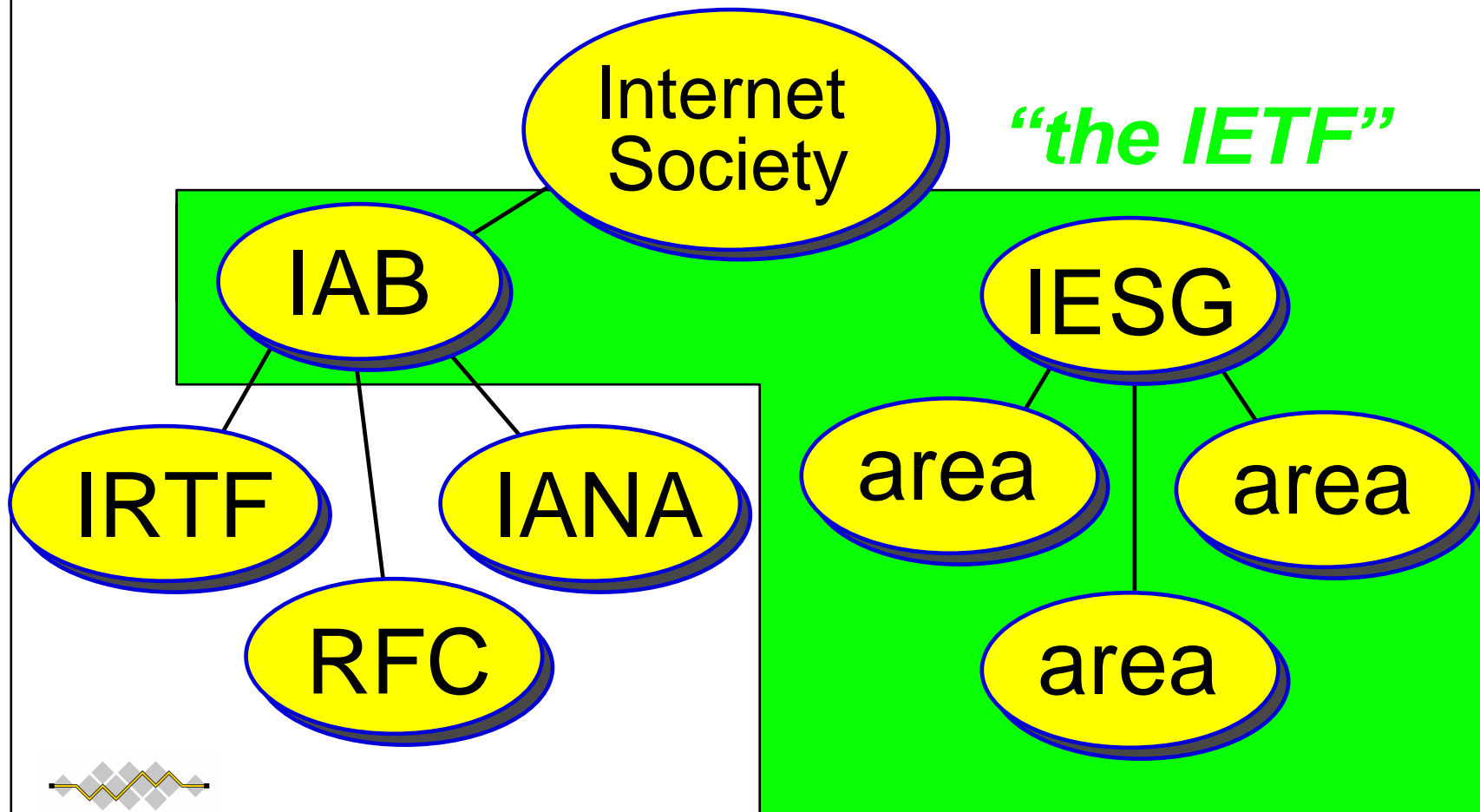new-work mailing list – *new-work-request@ietf.org*

    to pre-announce new working groups and BOFs

    for representatives of other standards groups

       working on liaison statement process

I E T F

Organization of the IETF

Internet Society

"the IETF"

IAB

IESG

IRTF

IANA

RFC

area

area

area

I E T F

Internet Society (ISOC)

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

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

provides legal umbrella & insurance for IETF

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

I E T F

Internet Research Task Force (IRTF)

focused on **long term** problems in Internet

Anti-Spam

Authentication Authorisation Accounting Architecture

Crypto Forum

Delay-Tolerant Networking

End-to-End

Group Security

Internet Measurement

IP Mobility Optimizations

Network Management

Peer-to-Peer

Routing (including Ad Hoc Network Scaling Research Subgroup)

Searchable Internet Resource Names

Services Management

I E T F

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

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

I E T F

RFC Editor

was Jon Postel and helpers

  now (sadly) just "the RFC Editor"

rfc-editor@rfc-editor.org

funded by the Internet Society

semi-independent

  gets requests to publish IETF IDs from IESG
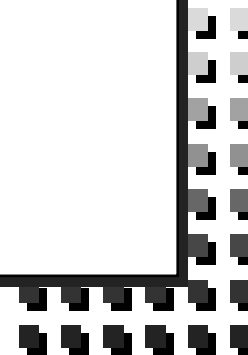
  gets requests to publish independent IDs for info or exp RFCs

    asks IESG for advice on publishing independent RFCs

    but can exercise own discretion

    presumption is to publish technically competent IDs
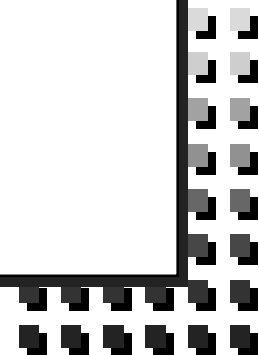
      which sometimes is a conflict with IESG

I E T F

IETF Chair

Harald Alvestrand
- also chair of **IESG**
- also director of **General Area**
- also ex officio member of **IAB**

nominated by IETF community - this includes <u>you</u>

selected by nomcom

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

I E T F

Area Directors (ADs)

nominated by the community – this includes <u>you</u>

   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

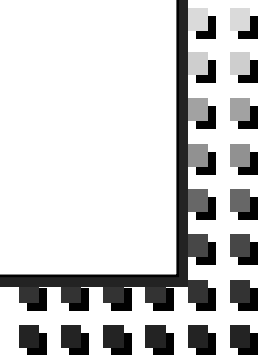# Internet Engineering Steering Group (IESG)

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

I E T F

IETF Secretariat

runs

    plenary meetings

    mailing lists hosted by IETF

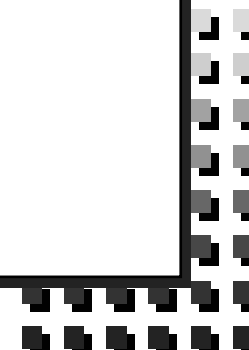   Internet-Draft directory

    IESG teleconferences

coordinates

    day to day work of IESG and working groups

located physically

    Foretec – Reston, Virginia

funded from IETF meeting fees

I E T F

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 2777 describes "random")

I E T F

Dots

🔴 IAB member (red)

🟡 IESG member (yellow)

🔵 Working Group chair (blue)

🟠 nomcom (orange) – they came to listen to you...

🟢 local host (green)

🙂 others, maybe even drums and ornaments ...

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)

I E T F

Working Groups
(continued)

"**rough consensus** and running code..."

no formal voting

    can do show of hands or hum - but **no** count

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!)
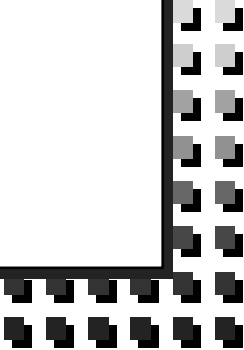 - informational, experimental, BCP, standards track, historic

3-stage standards track, under review in NEWTRK

- Proposed Standard, Draft Standard, Internet Standard

interoperability not conformance

I E T F

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

I E T F

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 ...

... updated for QoS

I E T F

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 Papers

Internet-Draft

    random or non-random thoughts

    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

I E T F

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)
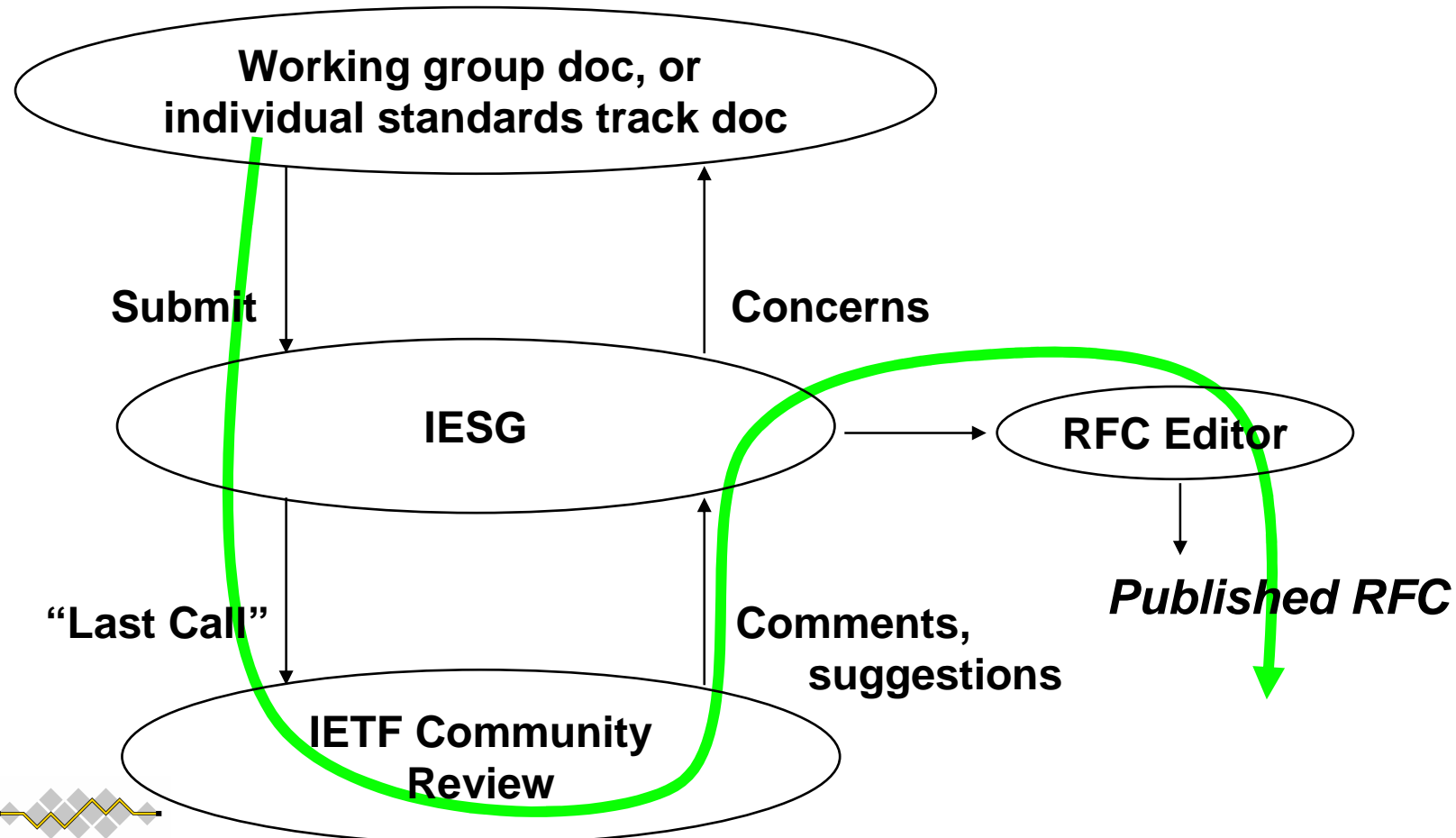
    anyone can comment

    IESG considers comments and its own review

      may approve publication as standards track RFC
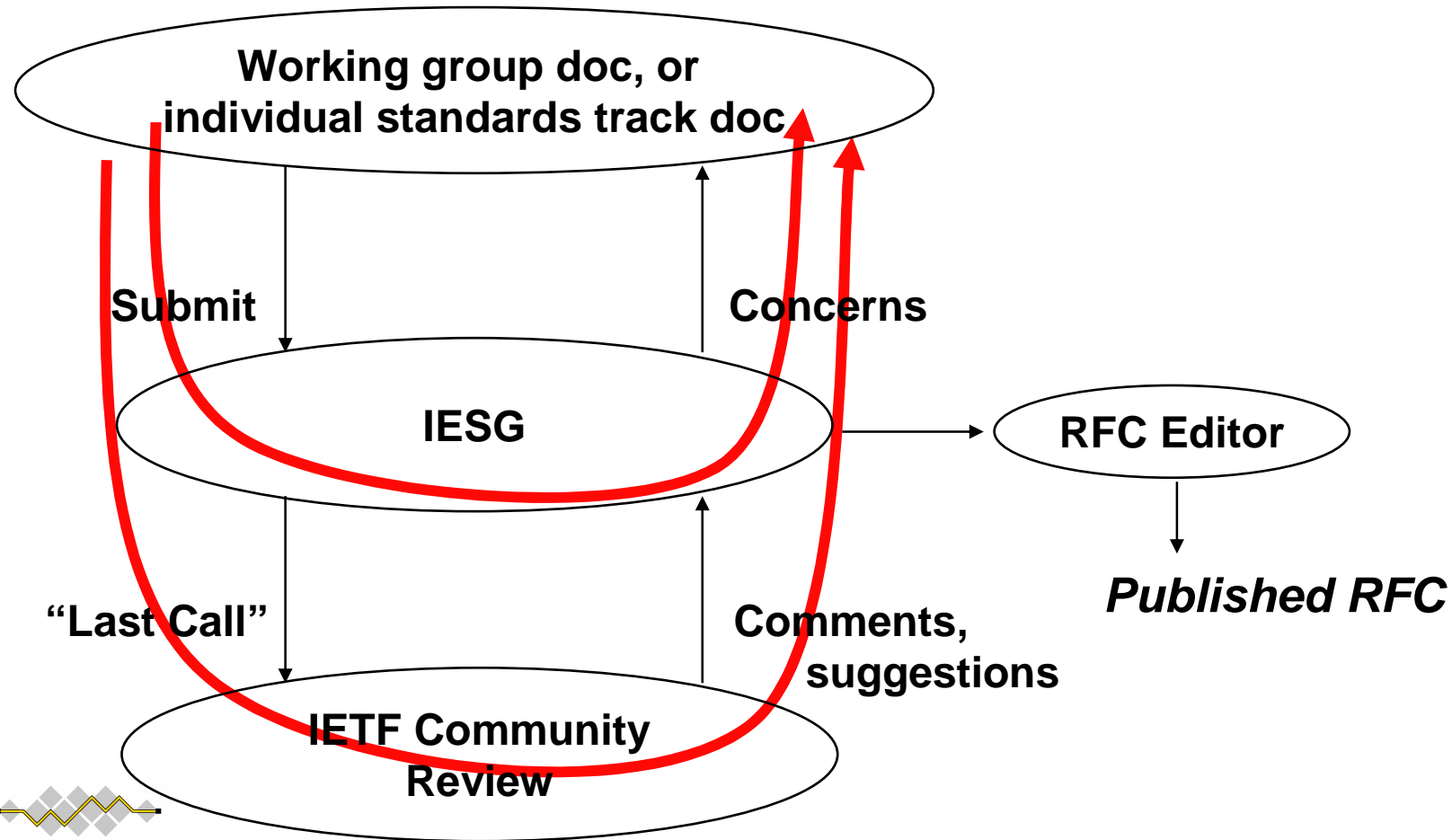
      may point out issues to working group & return ID

similar process for non-WG drafts (with 4-week LC)
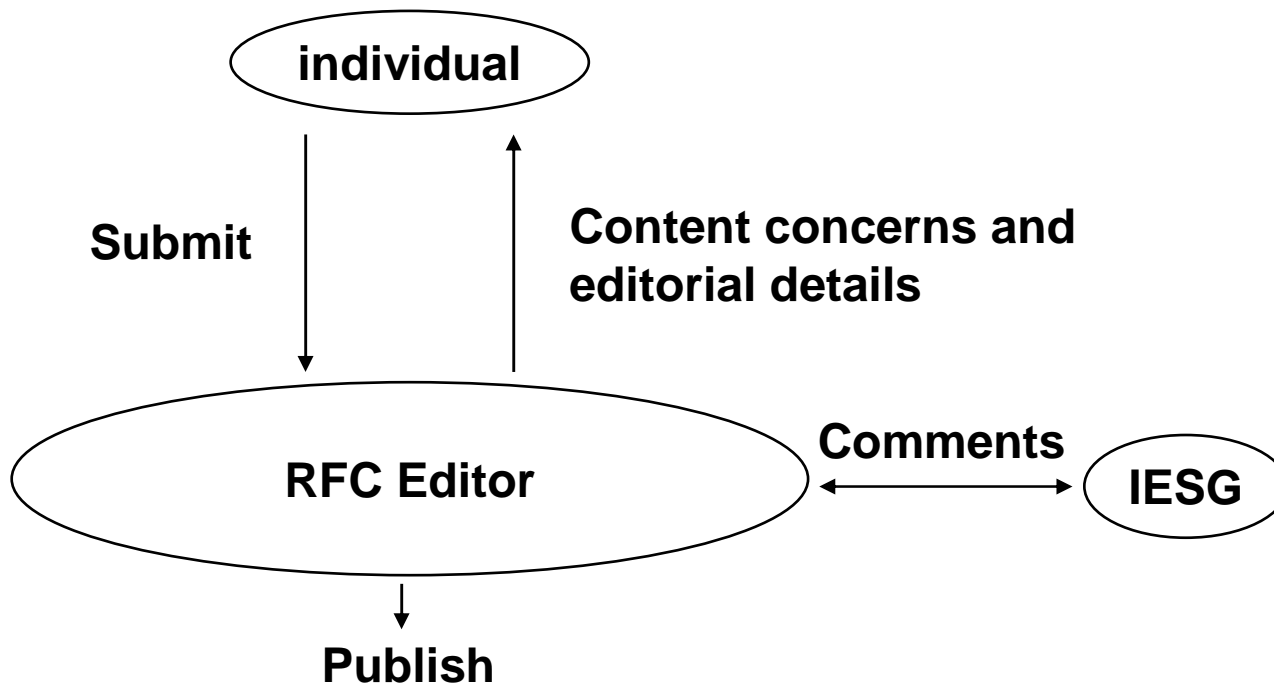
I E T F

IETF Submission the right way

Working group doc, or
individual standards track doc

Submit

Concerns

IESG

RFC Editor

"Last Call"

Comments,
suggestions

Published RFC

IETF Community
Review

I E T F

IETF Submission the other way

Working group doc, or
individual standards track doc

Submit

Concerns

IESG

RFC Editor

"Last Call"

Comments,
suggestions

Published RFC

IETF Community
Review

I E T F

Non-IETF Submissions

Working Group Creation

may have BOF → **Chair, description, goals and milestones**

community

Area Director

new-work & IETF Announce ↔ **IESG** ↔ **IAB**

Working group created
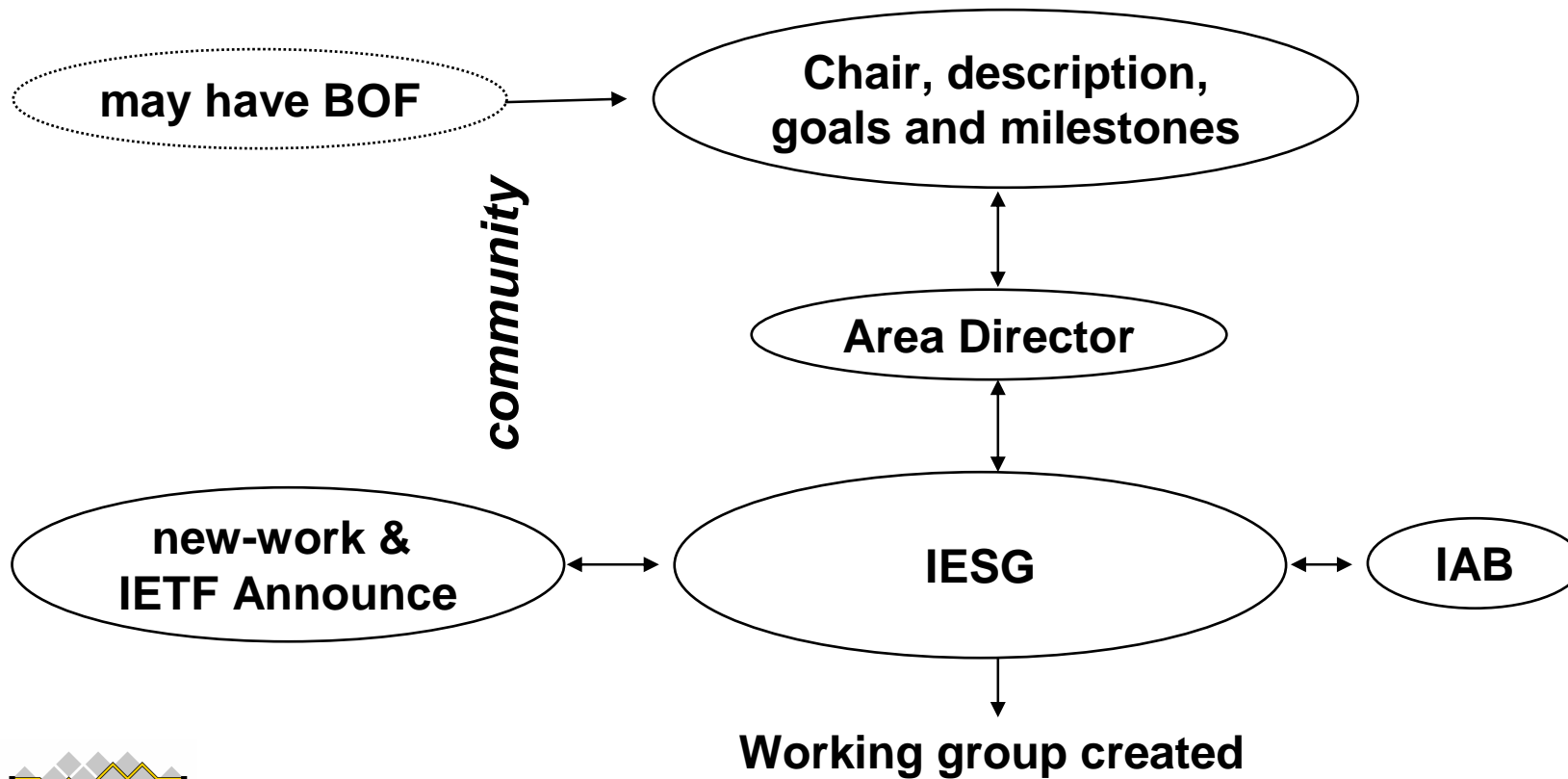
I E T F

Appeals Process

IETF decisions can be appealed

    start appeal at 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

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)
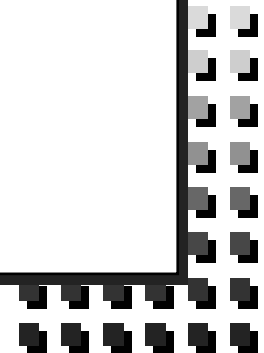Ted Hardie <hardie@qualcomm.com>

Internet (int)

Thomas Narten <narten@us.ibm.com>
Margaret Wasserman <margaret.wasserman@nokia.com>

Operations & Management (ops)

David Kessens <david.kessens@nokia.com> (new since IETF 58)
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>
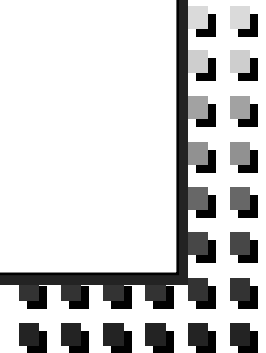
Transport Services (tsv)
> Allison Mankin <mankin@psg.com>
>
> Jon Peterson <jon.peterson@neustar.biz>

I E T F

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

Other IETF Training/Tutorials

provided by EDU-Team at each IETF
  see details at https://www1.ietf.org/mailman/listinfo/edu-discuss

1300-1500 Editor's Training - Gardenia A-2

1300-1500 Intro WG Chairs Training – Astor

1500-1700 Security Tutorial - Sapphire 4

1700-1900 Welcome Reception - Crystal Ballroom
    (talking to IETF people is always an education!)

I E T F

What next?

Join mailing lists

This is where the work happens

Read the drafts
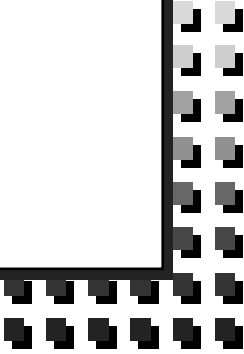
Don't be shy

Talk to people

Look for common ground

Help people

Don't settle for second-rate

I E T F

Questions