

IANA, IETF, and the Protocol Parameters: a Brief Tutorial

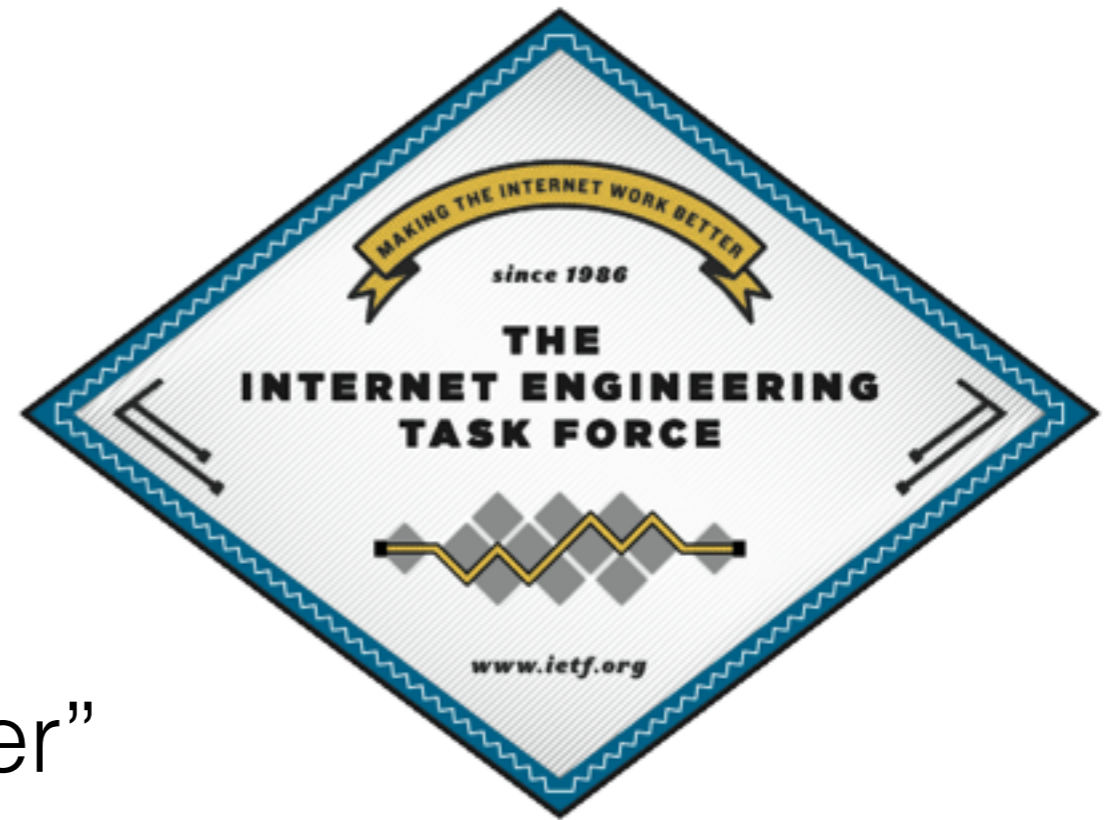
Jari Arkko, April 20, 2015

Disclaimer:

I hope that these slides are informative

They should be taken as an illustration of IETF opinions and processes, not as a replacement for the actual RFCs or the IANA transition proposal that the IETF community has submitted to the ICG

IETF



- “Make the Internet work better”
- A standards organisation that works on core Internet technology — TCP/IP, HTTP, VoIP, ...
- Openness — anyone can participate, much of the work is done over the net
- Decisions based on community rough consensus
- Participants are individuals, not organisations

Protocol Parameters

- Some IETF standards need a registry of port numbers and other similar values
- Similar to how, say, IEEE registers their values
- Example: HTTP error codes

Registries and (some) values are specified in RFCs

Thousands of registries

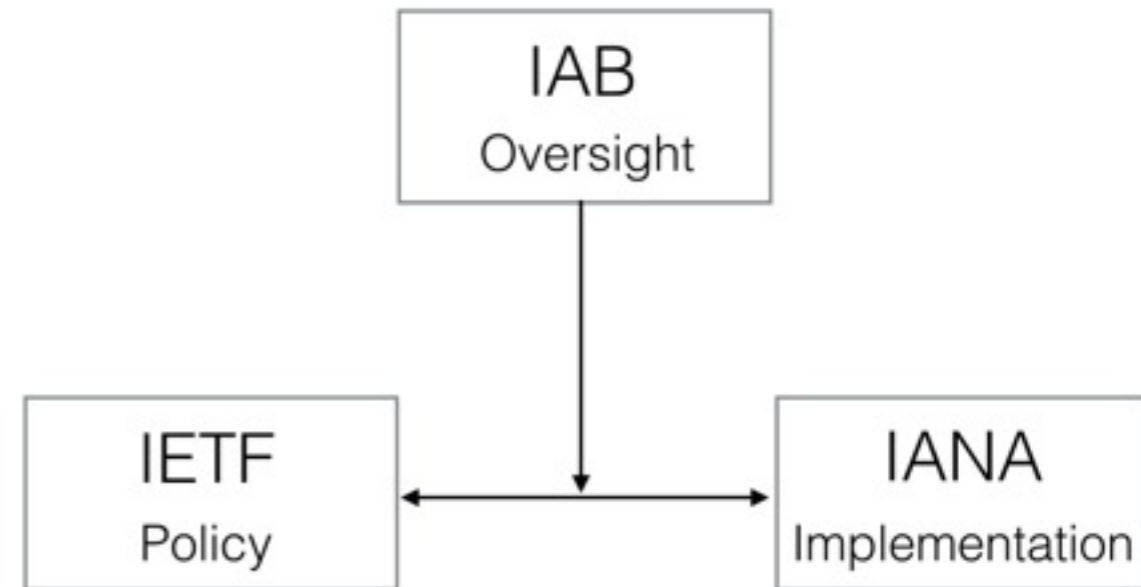
No direct operational Internet impact — all effects take place through vendors and implementors

| Value | Description | Reference |
|--------------|--------------------|------------------|
| 400 | Bad Request | RFC 7231 |
| 401 | Unauthorized | RFC 7235 |
| 402 | Payment Required | RFC 7231 |
| 403 | Forbidden | RFC 7231 |
| 404 | Not Found | RFC 7231 |

IETF and IANA

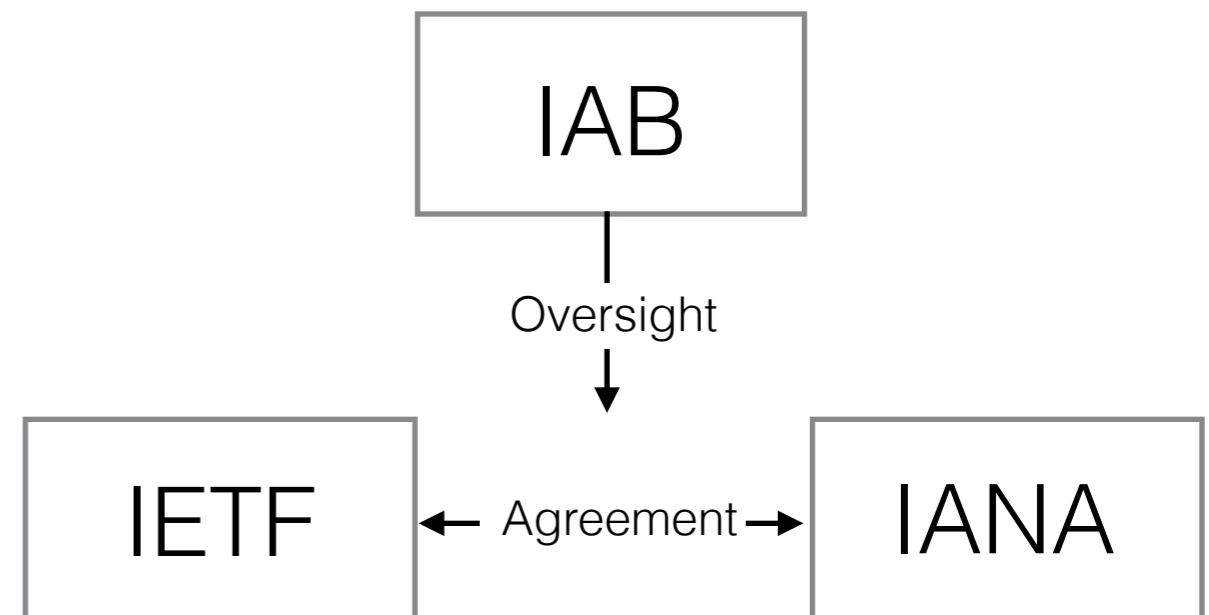
Division of Labour

- Policy decisions for these allocations are at the IETF
 - IAB provides oversight
 - IETF contracts with the IANA service operator for implementation of the registry
- IANA arrangements have matured over time
- 35+ years of good experience from the basic setups



How Do IETF and IANA Work Together?

- Agreements specify roles
- Problems within IETF are subject to usual IETF processes
- Problems between IETF and IANA are subject to agreement processes



- Oversight provided by the IAB
- Yearly improvements are made when needs/issues arise
- There is no operational USG involvement, nor has there been

What Is Oversight?

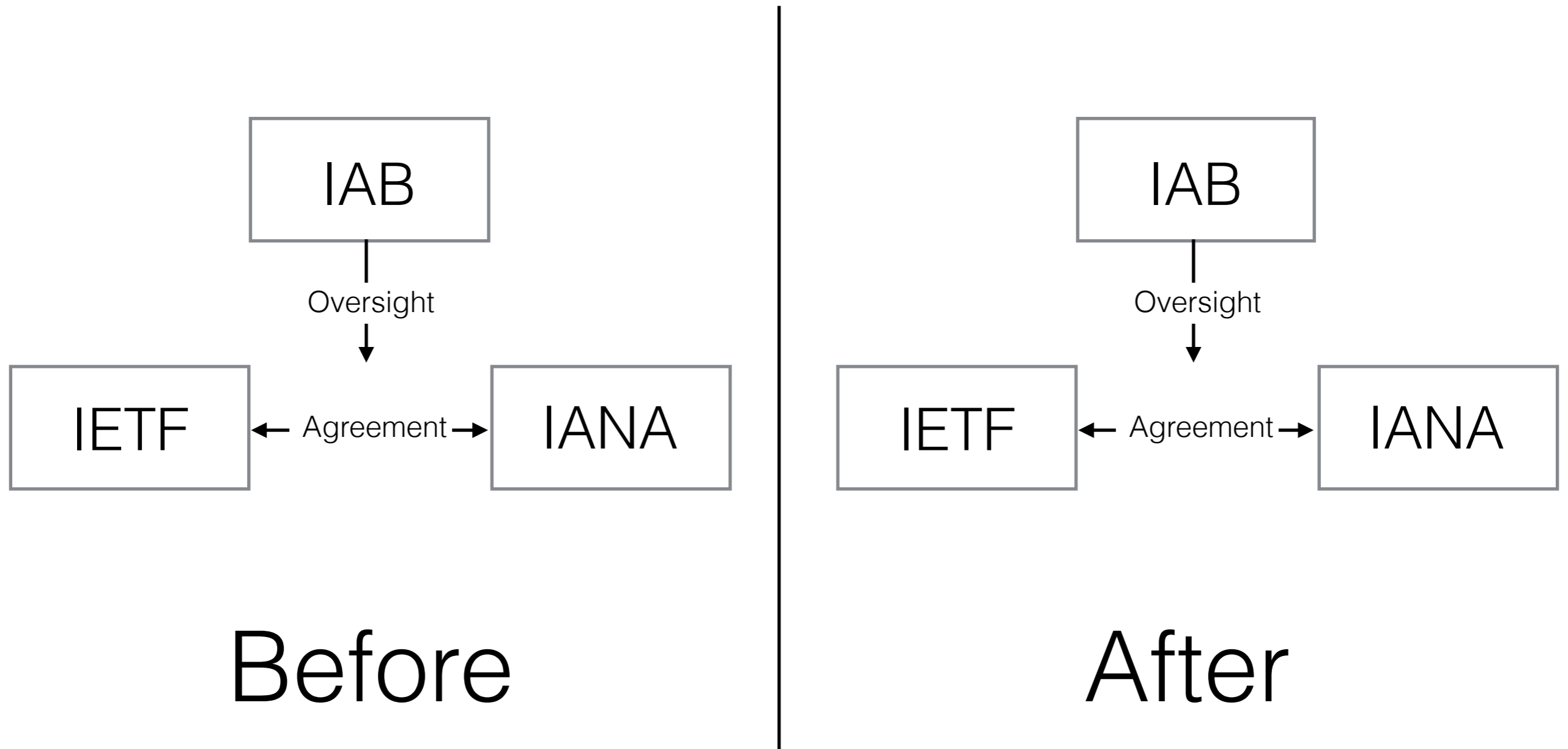
- Ensuring that the arrangements continue to match current needs
- Revision and maintenance of relevant processes and contracts on a periodic basis
- Ensuring that the IETF has an IANA service operator that fulfils the community's needs
 - And we do, ICANN has served us well
- Acting as a final arbiter in disputes

IANA Stewardship Transition

IANA Stewardship Transition for the Protocol Parameters

- IETF discussions took place at the IANAPLAN working group in 2014, resulting in a proposal (draft-ietf-ianaplan-icg-response)
- After analysis, the IETF community determined that the protocol parameters are best served with the current operational model:
 - No change to roles of organisations
 - No new organisation needed
 - IANA (protocol parameters part) continues to be directed by the IETF community
 - Continue, not replace, decades-old practices

Transition



The USG stepping away from its stewardship role over the IANA functions does not affect protocol parameters given their "limited to no" role historically

Does Anything
Change?

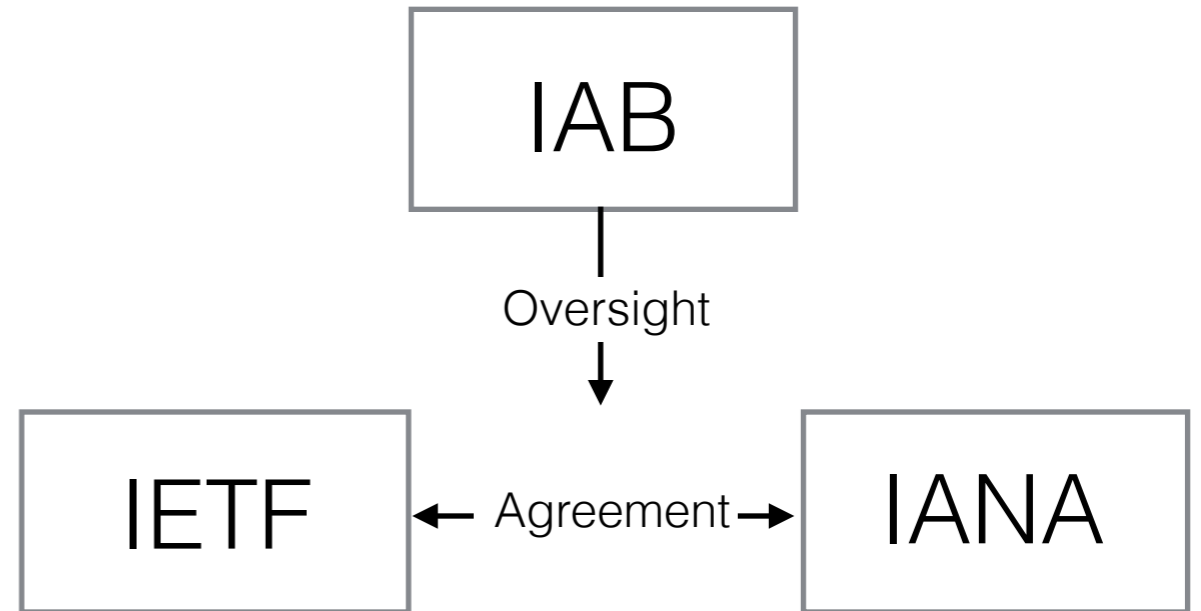
Does Anything Change?

- “The transition does not change the arrangements with respect to protocol parameters”
- The IETF is a part of the transition discussion because we want the whole system to transition
- While the overall arrangements do not change, some fine-tuning happens in the details, in a manner similar to the yearly updates of IETF-IANA agreements
- See the IETF transition proposal, draft-ietf-ianaplan-icg-response, for the details.

Accountability

Accountability in the IETF and IANA Relationship

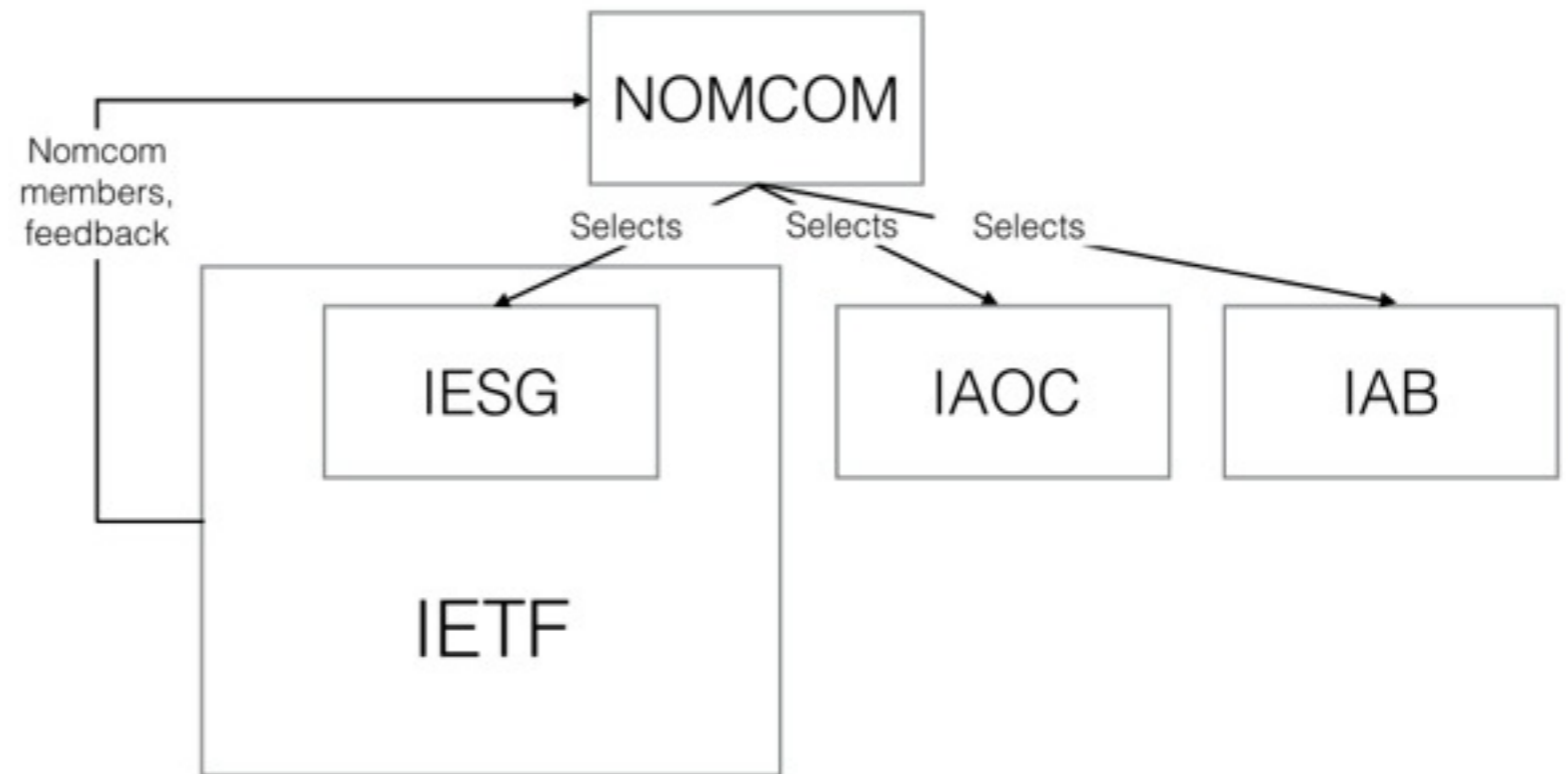
- Daily operations involve discussions at the staff and participant level
- Unresolved policy issues or other conflicts can be brought to the IETF steering group (IESG)
- Existing agreements (RFC 2860) give IAB final say in disputes
- Contract termination could be used to move to a new service provider — we think this is very unlikely, but we are prepared for any eventuality



Accountability at IETF

Oversight of the IETF bodies is important

- Far more so than the oversight of clerical functions
- Nominations committee (Nomcom), appeals, and board recall mechanisms have existed in the IETF for decades
- Nomcom mechanisms make it hard to take over IETF boards



Appeals and Recalls

- Decisions in the IETF are by the community, but determined by the working group chairs and the IETF steering group
- Anyone can appeal a decision, for instance, to correct a mistake in the substance or the process leading to the decision (RFC 2026)
 - But appeals are not a way to override an informed community opinion
 - Appeals are not about legality, they are an opportunity for review and reconsideration
 - Appeals are processed through the management chain where the issue occurred, may proceed to the next level (IESG, IAB, ISOC)
- Board members can be recalled through a recall process (RFC 7437)
 - Starting the recall process requires 20 Nomcom-eligible participants

Nomcom Safeguards

Members for the IETF boards are selected by the Nomcom

- Members for the Nomcom can only be people who have a history of participation in the IETF (3 out of last 5 meetings)
- Selection from the set of eligible and willing volunteers is based on a publicly verifiable random process (RFC 3797)
- No more than two volunteers from the same organisational affiliation can participate in the Nomcom
- Nomcom chair is named by ISOC and several liaisons from ISOC and elsewhere observe the process, and there are recall processes for Nomcom members and chairs

Nomcom Safeguards

More details in RFC 7437

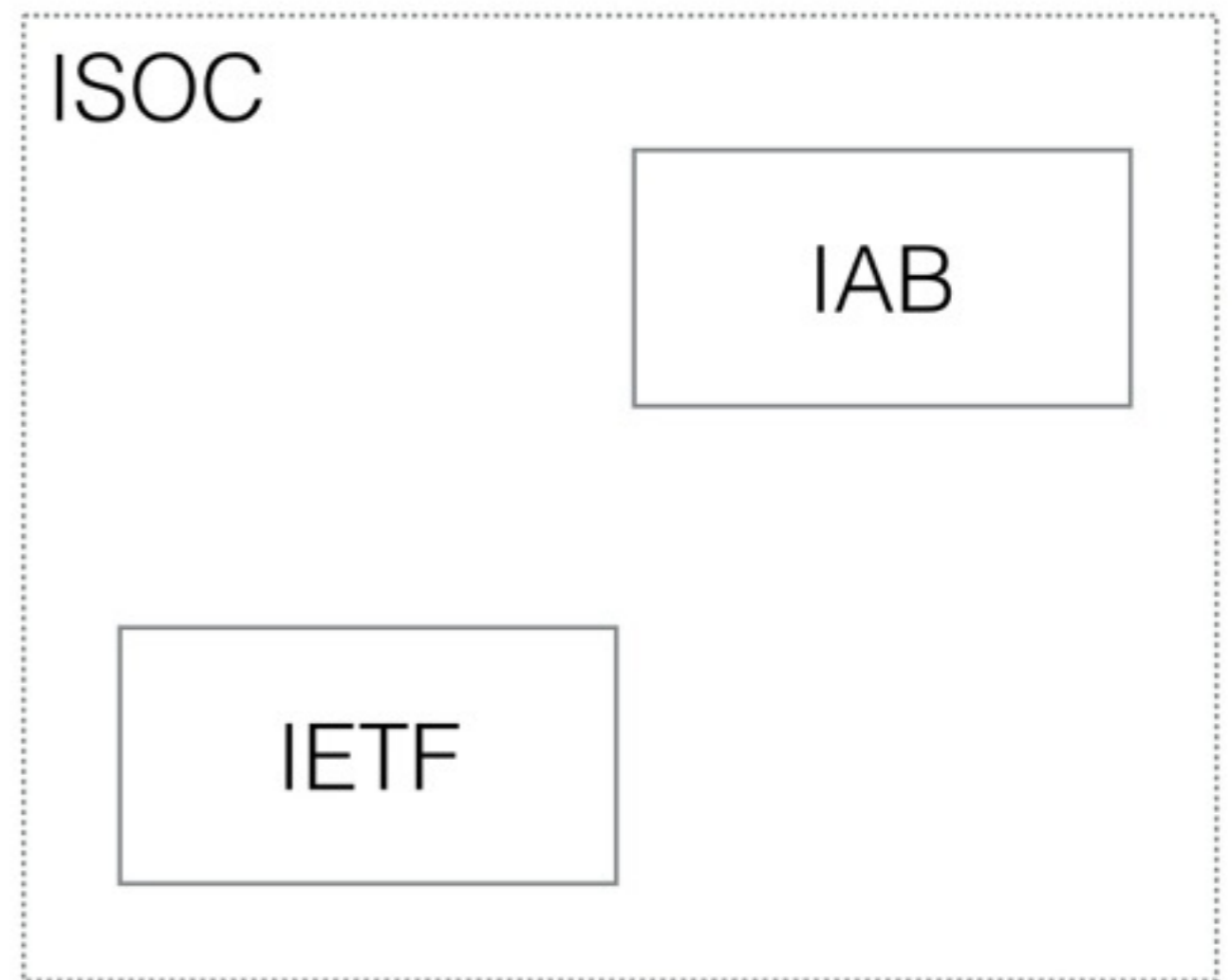
The IETF Nomcom process provides resistance against various kind of bad outcomes and takeover attempts — and it has, historically, performed well

- Randomness ensures a broad selection from IETF participants
- Randomness and limits for one organisations's participation limit the ability to affect the process
- Observers are an important check; recall process acts as a final line of defense

IETF Organisation and Structure

Zooming Into the Details

- If you look closer, the IETF system has additional entities
- These are not specific for handling IANA
- A part of regular IETF leadership and administrative arrangements
- ISOC is the “corporate home of the IETF”
- But what are IESG (RFC 2418), IAOC (RFC 4017), IETF Trust (RFC 4371)?



Role of IETF Entities in IANA Oversight

- This is a general model for all similar situations - the oversight of other contractors (e.g., RFC Editor) and IANA is handled similarly
- The IAB has an overall IANA oversight role (per RFC 2850)
- The IAOC is an administrative committee that is involved when contracts are needed for the IETF (per RFC 4017)
 - They work with IAB for making yearly updates of IANA contracts
 - The ISOC is the corporate home of the IETF, however, so decisions of the IAOC get executed by ISOC
- Finally, the IETF Trust is a free-standing legal entity that holds copyrights and trademarks associated with all IETF activities

End