

Bringing New Work to the IETF (v1)

IETF 103

Bangkok



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Why Alia cares about new work proposals

- IETF creates Standards for the Internet - with changing Technical Needs
- A vibrant Internet for all requires New Work, New Ideas, and New People engaging in the IETF.
- Served as Routing AD for 4 years and saw the challenges to bringing new work in.
 - Chartered 3 new WGs (bier, babel, and lsr) & rechartered rtgwg, i2rs, sfc, nvo3, bier, etc.
- Served as RTGWWG Chair - which WG tries to bring in and discuss new ideas around Routing
- My new work idea (IP/LDP Fast-Reroute) helped motivate creating RTGWWG.
- Worked on RIFT protocol - led to new RIFT WG.

Why Spencer cares about new work proposals

- I'm currently serving as Transport Area Director (since 2013)
- From RFC 2418/BCP 25
 - "Area Directors are responsible for ensuring that working groups in their area produce coherent, coordinated, architecturally consistent and timely output as a contribution to the overall results of the IETF."
- Area Directors charter new work in the IETF
 - I've chartered 3 working groups, rechartered 6 working groups
- I previously served on the IAB (2010-2013)
 - IAB members provide architectural oversight for new work proposals
 - I usually provided feedback for 1-2 new work proposals per IETF cycle

Why Spencer started caring about this topic

- I started out at the IETF with a proposal for TCP over cellular in 1996
 - I figured out how to get it chartered, after asking for a LOT of help
- My next proposal for new work wasn't chartered after two BOFs
 - All this seemed very complicated and mysterious to me. And it was.
- My next proposal for new work was DISPATCHed and chartered
 - I was getting better at this ...
- I've talked to a lot of people who don't know how to propose new work
 - Within my own companies and from other companies
 - As a working group chair, as an IAB member, and as an Area Director

I kept thinking, "we can do better than this!"

What you can learn on your own



The "Written Process"

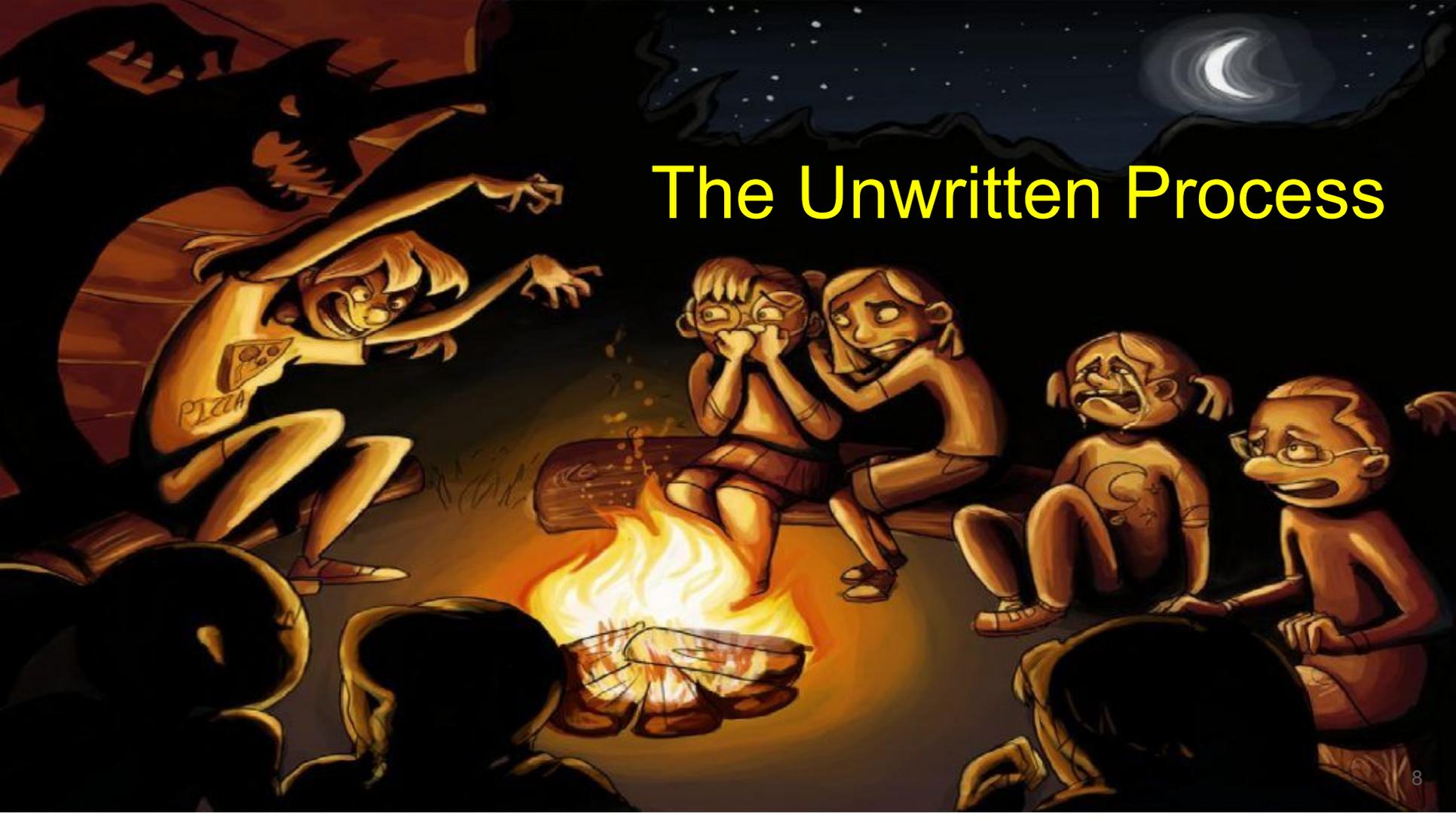
- BCP 25/[RFC 2418](#) - IETF Working Group Guidelines and Procedures
 - Section 2 - Working group formation
 - Section 2.1 - Criteria for formation
 - Section 2.2 - Charter
 - Section 2.3 - Charter review & approval
 - Section 2.4 - Birds of a feather (BOF)
- Informational Guidance
 - [RFC 5434](#) - Considerations for Having a Successful Birds-of-a-Feather (BOF) Session
 - [RFC 6771](#) - Considerations for Having a Successful "Bar BOF" Side Meeting



Commentary on the "Written Process"

- BCP 25/[RFC 2418](#) - IETF Working Group Guidelines and Procedures
 - The big picture hasn't changed a lot since RFC 1603 was issued in 1994
 - **ADs have a LOT of flexibility in what they charter**
 - **ADs rely a LOT on proponents to prepare and advance proposals**
- Informational Guidance - [RFC 5434](#) and [RFC 6771](#)
 - Good information, especially "start early" and "ask these questions"
- Almost all this material assumes you need a new working group
 - But you might not, and if you do, you might not need a BOF
- Spencer's opinion - many people think the process is deterministic
 - "If we follow these steps, we automatically get a working group"
 - The process is **not** deterministic, because every proposal is different

The Unwritten Process



Key Questions Before You Start

- Are you in the right place?
- Is This Really Engineering, or is it Research?
- Who have you talked to? Who should you talk to?
- Has this been tried before?
- How much work are you thinking about?



Are you in the right place?

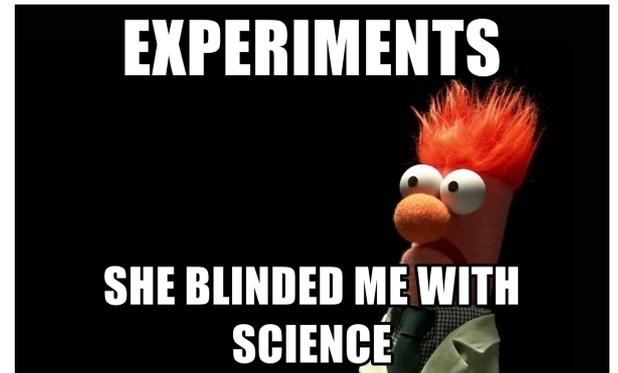
- Is this work usable on a global scale?
 - The "I" in "IETF" is still mostly "Internet"
 - We do work on widely used protocols that don't traverse the Internet
- Is this protocol work?
 - We want our work to be applicable across use cases and architectures
 - We also develop operational procedures for IP networks
- Is this at, or above, the IP layer?
 - Many protocols below IP are done in other SDOs and forums
- Does it need to be standardized?
 - Is interoperability valuable to you, or to your customers?



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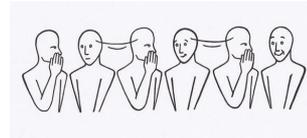
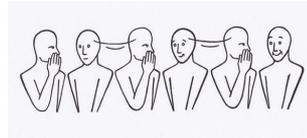
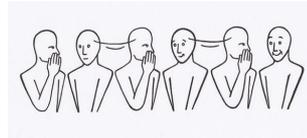
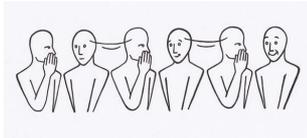
Is This Really Engineering, or is it Research?

- The "E" stands for "Engineering" - "we know how to do this"
- Internet Research Task Force - "we will find out how to do this"
 - [RFC 7418: An IRTF Primer for IETF Participants](#)
 - IRTF research groups differ from IETF working groups in Scope, Time Frames, Alternatives, Process, Charters, Deliverables, and Completion
- If you need to discover things to succeed, talk to the IRTF Chair!



Who have you talked to? Who should you talk to?

- IAB members and area directors know "the process"
- Area directors have a broad understanding of where work fits
- Working group chairs know whether work fits in an existing charter
- Other participants know whether a proposal interests them
- Lots of people know relevant history, especially roads not taken
- Always ask, "who else should I talk to about this?"
- And don't stop, when you run out of IETF people to talk to!
 - Do Open Source projects need to know about your proposal?
 - Often, your topic will be interesting to other SDOs. Which ones?



Has this been tried before?

- The IETF has already attempted many things that didn't happen
- There are proposals that keep coming back in various forms
- Sometimes situations change, so previous failures would succeed
- Too often, not! ("Trying to guess initial path capacity without probing")
- You want to know whether something like your idea has been tried
- If it has, you want to know why this time, things will be different



How much work are you thinking about?

- Small - updating a protocol or a procedure
- Large - creation or major extension to a protocol or procedure
- Huge - building new types of products or networks



Key Questions to Be Answered

Small Proposals: What WG?

Are others in the WG interested to do work on it (and why)

Do others agree it is useful/needed?

Large Proposals: Is work needed understood & clear?

What stakeholders care?

Who will do the work?

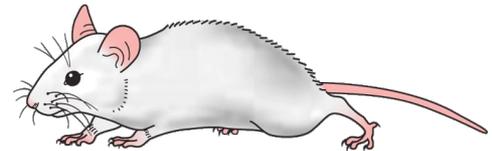
Does it break other things?

Huge Proposals: Is it really new & needed?

Can it be broken down to be tractable?

What parts of the work are clearly understood?

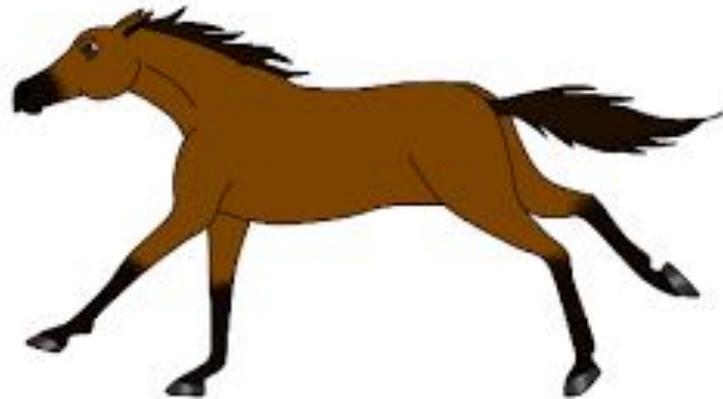
Small Proposals



Small proposals COULD be pretty easy



- Already a community of interest, probably a working group
 - Some current working group charter likely covers your new proposal
 - Your job is to find the right place
 - Probably talking to working group chairs, maybe talking to area directors
- Most areas now have one or more "catch-all" working groups
 - Like TSVWG, for small proposals, or DISPATCH, to help find a home
- Your job is to explain why your proposal is needed
- Your job is to explain your proposal at a high level and clearly
- One key question: do the benefits outweigh the cost of not doing this?



Large Proposals

Large proposals most closely match the BCPs

- There may be an appropriate working group now
 - Large proposals likely require re-charter of an existing working group
 - If not, you'll probably be proposing a new working group charter
- You're probably talking to working group chairs or area directors
- In addition to "small proposal" steps, you also build a community
 - This can involve informal side meetings, or formal "BOFs"
 - Don't forget that BOFs are not a required step on the way to a charter!
- You probably want to ask for help negotiating the maze of chartering
 - People may volunteer
 - You can ask chairs, area directors, or other participants for help



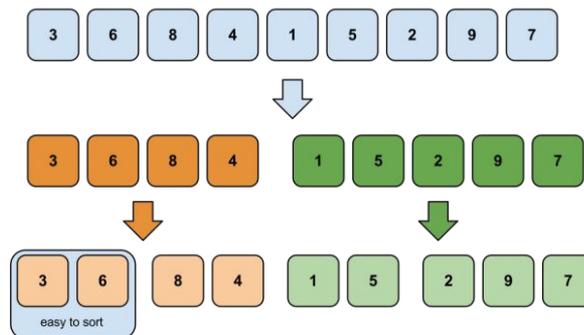
What's the difference between "Large" and "Huge"?

- "Large" proposals match the BCP process for new work proposals
 - They fit in one area
 - They fit in one working group
- "Huge" proposals often map onto products or types of networks
 - Lots of interfaces to different things
 - Not all the interfaces would use the same protocols or procedures
- "Huge" proposals don't match the defined IETF standards process
 - "Success" is going to mean breaking "huge" into "Large" proposals
 - The IESG will try to do this, if they have no other choice
 - But you **really** want to do it for them!

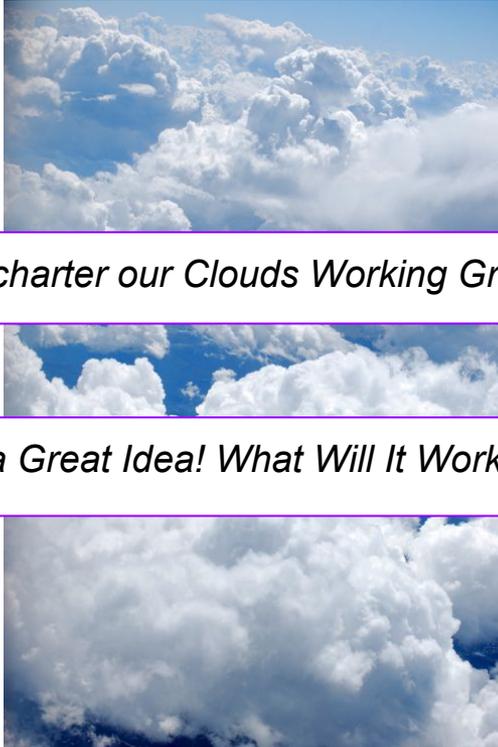
Why do we want to break up "Huge" proposals?

- Current process was designed to charter one working group in one area
- Huge proposals often involve **multiple protocols/multiple interfaces**
- Huge proposals often involve **multiple working groups/multiple areas**
- Huge proposals often involve work in **more than one SDO**
- ADs see parts of the proposals that don't fit in their areas and don't say "yes"
- Handing off to another AD probably doesn't help, but burns time

***Divide first,
THEN conquer!***



Mismatch Between “Hot Topics” and IETF Structure



“Please charter our Clouds Working Group!!!”

“That’s a Great Idea! What Will It Work On?”

Cloud Applications (APP)

Cloud Transport (TSV)

Cloud Request RTG (RTG)

Cloud Hop by Hop (INT)

Cloud Security (SEC)

Cloud Operations (OPS)

If you hear an AD say "maps and gaps", what's that?

- Proponents QUICKLY identify interfaces and rough functionality
- Proponents QUICKLY identify protocols that might provide that functionality
- **"Maps"** - What protocols will be **reused? Extended? Invented?**
- **"Gaps"** - Proponents QUICKLY develop "gap analysis" - **what's missing?**
- Identify existing working groups that will **extend existing protocols**
- Identify existing or new working groups to **invent new protocols**

These steps are important for "Large" proposals
These steps are critical for "huge" proposals!

"Why is the IETF so slow?"

- We want to produce work on something important and urgent
- We could start working on it, but it's not chartered/re-chartered
- We could request a charter/re-charter, but we need a BOF first - or two
- We could request a BOF, but we think we need a side meeting first - or two
- (See a problem yet?)
- If we're trying to **finish** quickly, **waiting to start** is the wrong thing to do



The IAB: perhaps the IETF's best-kept secret

- From [RFC 2850: Charter of the Internet Architecture Board \(IAB\)](#):

IAB members pay special attention to emerging activities in the IETF and to "Birds of a Feather" sessions at IETF meetings. The IAB assists the IESG in evaluating such activities and in determining whether an IETF or an IRTF group is more appropriate. When a new IETF working group is proposed, the IESG will forward a preliminary version of the charter to the IAB for review of architectural consistency and integrity. The IAB shall review these proposed charters and give feedback to the IESG as appropriate

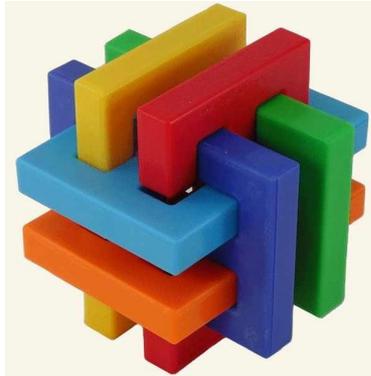
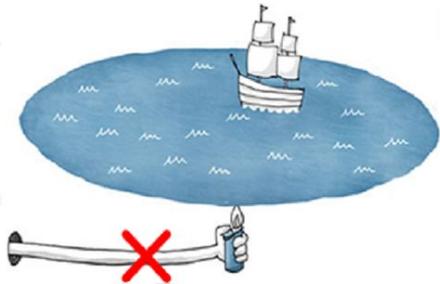
- And check out [IAB Member Roles in Evaluating New Work Proposals](#):
 - The IAB "covers" virtually all BOFs - they send one or more members to summarize BOFs and provide feedback to the IESG. You can ask to see feedback about your BOF. Most people don't.
 - The IAB provides "shepherds" for new work proposals upon AD request. Shepherds can provide architectural guidance, or help "improve" a BOF proposal to maximize the chances of a useful BOF outcome.

Other stuff we hope you remember



Classic Fails in BoF Requests and Charters

- “Boiling the ocean” - “short-term” and “limited scope” are usually preferred
- “Gordian Knot” - doing multiple things that can be used independently
- “Swiss Army Knife” - combining two or three efforts necessary for one product
 - Do all your interfaces need to be in the same working group" the same area?
 - Proposals for topics that really are on area boundaries aren't easy to manage!
- “Forgetting your Audience” - a charter that's only clear to people in your area
 - Most of the 27 people who evaluate new work proposals aren't expert in your area



What other tools do you have at your disposal?

- We want to make it easy for you to find or form a community for your proposal
 - Most ADs are happy to approve most mailing list requests
 - Since IETF 99, we've been providing hoc “side meeting” rooms
 - Since IETF 100, we've been providing "IETF Lounge"/"Code Lounge"
 - Since IETF 101, we've been sponsoring "HotRFC Lightning Talks"
- **We hope people who bring in new work will focus on "maps and gaps"**
- **If they don't, ADs can charter a working group to do "maps and gaps"**
- We want to figure out what's in scope for IETF vs other SDOs
- We want to make a “charter a WG/hold a BOF?” decision
- We want proposals for new work to be transparent
 - Your AD may push you toward a formal BOF, sooner than you expect

A collage of various colored sticky notes (blue, pink, yellow, green, orange, white) scattered across the page. Each sticky note has a large, bold, black question mark drawn on it. The notes are overlapping and slightly tilted, creating a sense of movement and inquiry.

Perhaps you have QUESTIONS???

Did this tutorial help?
(We really want to know!)

Survey is at <https://www.surveymonkey.com/r/newworktoietf>