IETF 100 Plenary Notes

Technical Plenary Q&A

Q: There are forces being imposed on the Internet from above, more and more these days. Can you talk about this?
A1: There are a lot of new technologies and industries coming in, things that weren't thought of as online properties before (medical, agriculture, etc.). They're going to use the common technologies in different ways. Use is going to be very much expanded, but it's going to be interesting to see what's common among them.
A2: I've heard a bit of tension between two modes, not just engineering but multi-stakeholder concerns. There's more involvement from NGOs, not government, not the ITU model. That model is under strain. The willingness of countries to participate and implement or observe is diminished. The assumption that the IETF model -- bottom-up, organized -- will continue to be expected by others, though that may not happen all by itself.
A3: "Don't politicize the Internet" could've been done several meetings ago, maybe at the beginning. We see the dynamics that are happening. There are dynamics that suggest we can't actually avoid it. Is there a threat of over-regulation of the Internet?

Q: We are moving from "We have done a great job" to "We have to be more responsible and ethical when thinking about how what we're developing can be used." "Security by design" is a great initiative; what else should we be paying attention to?
A3: Ethics are going to be very important. This has a direct relationship with governments, and it's going to be very important in the future.
A2: If we could engineer ethics into a network, I'm somewhat doubtful. Just about any technology we've developed that, despite best intentions of the engineers, they get used in ways we didn't anticipate, sometimes in negative ways. It's not clear that we could've done anything to avoid this. IT's important for us to see our role as technical professionals that include in our work the broader discussion; we should be able to anticipate in discussions the use of our protocols in applications that might be riskier than are visible at the protocol level.
A1: I understand that privacy can be difficult to include in designs. We can be more proactive in terms of what the design can be to include these issues.

Q: We built a pretty amazing thing over the last 100 IETF meetings. I'd like to think mostly it's a good thing and we've done a good thing for the world, but I admit being more concerned that we see it being used that are not good. It can give people who want to do bad things to multiply their work a lot. I fear this will only get worse. I want to keep thinking this is a good thing for everyone, and it clearly has been, but there's a dark side that we seem to address with only point solutions. It could get a lot worse.
A2: I'll take two stabs at it. We can do more thinking about how we can make solutions deployable by people different than us. TLS, secure email, etc., should by now have taught us that designing good technology doesn't mean it'll get deployed or work well. The harder challenge: We tend to think about the brain controlling the computer, but I'm worried about the reverse direction, namely systems that play to human weaknesses and characteristics. I didn't anticipate how powerful that can be. We can see it with

kids.  That, to me, is a much harder challenge.
A3: Yes, it's for good, but there's always this tension of polarity with miscreant characters, and you're never going to get away from that.  Being more cognizant of that fact is important.  The stakes are certainly higher.
A2: We as citizens have not been as strong at knowing what our technology can do and what remedies we have.  We can try teaching kids earlier, and provide a more healthy media landscape.  We accidentally undermine those things rather than including them in the foundation.  That's closer to what we can do.

Q: You've mentioned different examples of what can be done, but can you speak more about what that would look like?
A3: It's more awareness than anything else.  We should be aware, for example, that politicizing is something we should've been avoiding for a long time now.  Being more deliberate about expressing intention might help.
A2: It's not our choice to politicize the Internet or not.  Politics is nothing but community.  The Internet should be part of a political discussion, but it doesn't need to become a tool of that discussion.
A1: Don't politicize the Internet too much.

Q: I think I've heard the panel say there's not a clear distinction between the Internet and society.  There's such a strong inter-mingling that the distinction is hard to make.  Can you comment on this?
A0: That's a good way to express it.
A3: ISOC published an excellent report on this.
A2: We have not always been good about recognizing that this connection exists.  It's good that it's starting to happen.

Q: I'm glad you brought up this topic and you're talking about it.  I've had this conversation several times at this meeting.  There's a "dark side" of the Internet that, even at the IETF, we don't talk about.  There appear to be some rules about this.  We need to think about the unintended consequences of what we're doing; it's very dysfunctional.  We have a great deal of power here, in a way most policy organizations don't.  People setting encryption policy don't know what they're doing, but we do.  But we're not supposed to talk about policy.  We need to talk about these things.
A1: This community should be talking to other stakeholders about these topics.  They don't understand what we do, so we're not communicating the way we should.
A2: One of the values the IETF has had is that we are a collection of representatives of organizations.  Many of these organizations have historically been relatively non-influential in terms of policy individually, but that's changed and many of them are now.  This may become harder to reconcile.

Q: What your presentations have in common is that if you take the end-to-end principle, human beings are at the ends.
(no discussion)

Q: One of my favorite 20th century aphorisms is: "We shape our tools, and thereafter they shape us."  It seems to me we're cyborgs; we have become these creatures that

are the Internet. I wonder if there is this problem that we've lost the ability to make the kinds of decisions about what the technology can do, something we used to have. Maybe the "next 100" will shape us instead.
A3: When you become the cyborg, understanding the implications is clearly important. We can get lost in all of that. It's about being able to communicate what that means. We just need to be cognizant of it.
A1: It's really important for the future that the design in the Internet space and society has to include everything.
A2: We are not the first engineering discipline that has had large effects on society. Mechanical engineering provided the internal combustion engine, for example. I think we've had one advantage: We can see it growing, so we have a little more opportunity to react to it as it happens.

IAB Open Mic
(no open mic questions)

IAOC Open Mic

Q (comment): In the department of "Many Fine Lunches And Dinners", the document about venue selection is heading for Last Call.

Q: Regarding attendee numbers, you collectively have tried to analyze the disparity between projection and actual numbers. What do you have to report?
A (Leslie): We have to do more of that and come up with reasons.
Q: Have delegation sizes from companies changed? etc.
A (Tobias): There have been some delegation size shifts. I encourage you to look at the statistics.
A (Alissa): We don't publish delegation statistics, but we do look at them. Some are going up, some down.

Q: It seems to me that for the last couple of years we've been pointing out a number of trends that could push this number a little bit lower. We've been setting the stage that this could happen. Is there a plan for a plan to do something about it?
A (Leslie): It's a question of revising the budget to expect fewer people, which has trickle-down impacts for the years-in-advance we have things booked. There's work for the IESG to do as it relates to how we do the work that needs to be done. Do we jack up the fees on people that show up, or is there some other solution? Now is the time to start digging into it. Is it us? Is it you?
Q: There's two sides to the budget: Income and expenditures. We haven't been very good at controlling them. We've been investing a lot in remote participation. I wonder if that's a conversation the community needs to have.
A (Leslie): There seem to be more people staying home and participating remotely. It's also a question of whether this is part of our reality now. Maybe then we can tap into resources that we might not have if we didn't have remote participation. We need to do more work to look into this and figure out what the right financial model is.
A (John): My impression is that many of the remote participation is that they're in parts of the world where they wouldn't come no matter what. There's a related issue which is

that the average age of the people here is high. Many of these remote participants are young, which is good. So there are a number of interacting issues. We have this work to do, so maybe the model is that we can't expect to get as much money from participants as we used to be able to. Maybe we need to look at going to even cheaper places. Our future is not necessarily assured here even though ISOC does have a lot of money.
A (Leslie): We only started requiring registration for remote participation recently, making it possible to start collecting data about those participants.
A (Alissa): We need to recognize that there's budget impact, but there's also impact on IETF work. For many years the number was 1200; some remember when it was 2000, others remember when it was 50. Maybe 1000 is the new normal. Maybe this is the "right" 1000 people; I don't know. We need to consider both aspects.

Q (comment): The strength in the IETF is in our multi-stakeholder model. The concern on reversing diversity an the ability for people to participate remotely will hurt us. The reason I'm working on IETF outreach instead of my technical interests is that we need to work on pulling people in from the right areas, not just the ones that already come here. There's a lot of grey hairs here, and we keep having people retire, and that's not going to change.

Q (comment): I was fairly apprehensive about this trip. I have been uniformly impressed by this meeting venue (food, hotel, everything). I'd like to thank the IAOC and everyone that made this happen.

Q: You have budgets to plan but so do we. In a year we don't know where we're going.
A (Leslie): This is a concern for us; it's a delayed announcement. We do struggle at finding locations that fit us with the right balance of hotel requirements, hotel availability, meeting requirements, etc. We're hopefully getting better at this, but we're struggling because we can't announce something before the contracts have closed. We're sorry it's taken this long.

Q (comment): Thanks for providing the side meeting rooms. Our side meetings have been more productive than our working group meeting. Having the space to do this extra work rather than just relying on the hotel lobby was incredibly helpful to us. I would encourage the IAOC to keep doing that.
A (Leslie): Credit goes to the IESG and Alissa for this idea.

Announcement: Kaveh announced that the Computer History Museum has a formal museum-grade archive of the RFC Series thanks to the work of Heather.

IESG Open Mic

Q: There have been some attempts in TSV for the last few years to anticipate security protocols. They have had interesting names because the privacy concerns have been obviously broken because the headers are not encrypted. QUIC is going to fix this, but we don't have any mechanisms to deal with middle boxes. This needs some attention fairly quickly.

A (Alissa): We are paying attention to this. If people have suggestions about what more we could do, that would be helpful. It's been a dominant discussion lately.
A (Kathleen): I've been thinking about next steps, and a draft that comprises a starter for conversation about this is in last call. Documenting the problems is just the first step; there are probably gaps in it so people with operational experience looking at it would be helpful. We need to think about next steps, e.g., to figure out what considerations might be necessary. Do we need a structured plan, maybe a workshop? One protocol, multiple protocols? How do we advance this conversation to the end users? It's not just about privacy, it's about control.
A (Spencer): This is on my radar in my various roles. I would like for us to get a good understanding, quickly. Kathleen's draft is headed in that direction. There's another draft specifically about encrypted transport headers. If we're going to do engineering, we need to be able to describe reality first, so we know what we're trying to solve. I think the IETF can do what needs to be done. It's not like nobody is working on it. I would encourage everyone touching this space to help us move forward.
A (Warren): If people have read earlier versions of Kathleen's document, please re-read it. It's substantially different.
A (Benoit): I would say OPS should get involved in this too, not just TSV.
A (Alia): We manage the work you come up with and bring to us, and this is an area where we need research. We can document the problems, we can see the technology change needing to happen, but this is an area where we have an opportunity to change or tilt the field to think about the ethics of what we're doing here so we can be sure the Internet keeps working. Think about what you could do to contribute.

Q: The role of the IAB is not to tell the IETF what to do, but we do think about issues like this. We've run workshops on this, and we were going to do another one but we held off because it might look like we were going to step in. The messages that carry state mechanics between endpoints and the ones that carry signals to the path have divorced, and we do not intend to marry them again. That means the latter need a new form of analysis. We'r'e going to have to do bit-level analysis as we put these things onto the path; from now on, we're responsible for these signals. They're not going to be accidental inferences. They're our responsibility, and we have to do it very carefully, but we're on the hook for the analysis.
A (Spencer): We've gotten to the point on this with leadership to the point where the IAB leadership can't remember what they're doing to help. We talked about this daily on our IAB/IESG retreats. You have the interest and backing of your leadership as you're doing these investigations and want to help you move forward.

Q: What work product is planned to document moving from TCP to QUIC, in a language that can be understood by operators?
A (Mirja): The audience are not typical RFC readers, so we need to write this for normal operators. We explain in detail how to use the information that's available. It's not only one document.
A (Warren): It's not just us producing these documents. There's material coming from network operator organizations too.

Q: I asked the IESG a few weeks ago about the topic of the irrelevancy of the IETF: I've

heard we're arrogant, we don't listen, solutions outside are better, we're a one-way filter. People would come here if they felt welcome, but rather they feel intimidated. I can see a lot of reasons why. There are lots of proprietary implementations of things developed outside and getting deployment. Why are we being pushed into irrelevancy? They need help, they want to build better solutions.
A (Alia): We have and continue to try to reach out into operator communities. Warren has approached NANOG, others have approached others. One challenge is timeframes for producing work. Another is our volunteer culture, so getting volunteers to act as ambassador is tough. We also need to identify areas of work where an interoperable standard would be beneficial. It's a hard problem.
Q: One organization is a financial group called ONU(?) out of New York. They have standards they want to develop, but they don't want to come here. Why can't we just invite them here? We have to make them feel welcome.
A (Alia): We have to ask them to come, but we need to be listening. All of our liaisons work by having overlapping communities. We have that overlap; what we need to do is figure out how to develop it.
Q: We're going to get them here for the next meeting, so if anyone wants to participate in this liaison, please sign up.
A (Warren): A few years ago someone did a survey to find out about this. Some perceive us as arrogant. We had some momentum at the time to get feedback, but we lost it. We're planning on doing it again. We need to listen to people when they come here, and they can be intimidated by our style.
A (Spencer): Getting input from operators is a good and beautiful thing. The enterprise network people haven't gotten much of our attention because we don't know how to find them. Thank you for saying that out loud. Some people up here have been saying it, and we'd welcome help.
A (Alissa): Please don't wait until the next meeting. We do work on mailing lists, so get them involved so they can prepare in advance. Also, we're a two-way street. It's an extremely open organization; anyone can come and be critical, but the point is interoperating. You can build a small protocol that interoperates among a few friends, but it's a different thing to develop something that can interoperate globally.
A (Kathleen): The IESG and WG Chairs should collaborate on any tone problems that are keeping people away.

Q (comment): I know how to find the enterprise people. Many of us work for large enterprises. Our workplaces support contacts in our vendors. Follow the people.

Q: Thank you for your service. You have an IESG statement on "support documents" (use cases, frameworks, requirements) which wisely suggests working groups consider other forms of publications such as wikis. Are you aware that when you make DISCUSSes on such documents that have come through IETF consensus which suggest a document is pointless or has no value, you're being insulting to the community that brought it forward. You might want to revise your statement about this work, or advise working groups to drop such milestones, or back off on the critical language.
A (Benoit): Once it reaches the IESG, we shouldn't be saying the work is pointless. This is something that should be resolved in new charter creation. You should think carefully

about spending six months on a requirement statement.
A (Mirja): I don't remember anyone saying this. More often, we don't see the value of it; as maintainers of the stream, we want to understand why publication is needed.
A (Warren): Sometimes we don't word things quite as well as we should, and for that I apologize.
A (Kathleen): I see the value in the archival value of these documents. In some cases the working groups are interested in the value of publishing the work for their respective communities. I think this will shift as the IESG evolves.
A (Alia): At ballot time, it's time to show appreciation for the work, not for disregarding that work. I think part of the reason many charters leave the choice to the working group is to provide that value to our communities, so they can see how these pieces all fit together. They can be very valuable. And sometimes they're documents that are years old and are being rushed through. So giving the working group a choice about how to handle this is a good idea, and I'd be sad to see that choice removed.
A (Deborah): The statement was meant to indicate that spinning on requirements documents just delay publication of the actual technical work. The only case of this I can remember was one where the requirements work came after the technical work.
A (Alissa): There have been other instances as well.
A (Kathleen): This happened in some of my working groups. The impact was severe.
A (Warren): Sometimes you've read a couple hundred pages of documents, and you can forget when balloting that tons of work went into something and your comments can be flippant.

Q (comment): There's a problem with an external view of telecom vendors being regularly shot down here, and not paying attention to us. I'm very excited about QUIC, but also terrified by it. We (network engineers) are the only people that can help you. We need to be part of the dialog. I'm not just here to complain, I'm here to make us better.
A (Ted): Thank you for coming and for your comments. It was a recent call that we start assuming the whole network be encrypted by default. The best parallel I've heard this week is taking an 802.3 network and suddenly adding 802.11 to it. We really do care about that, but we haven't gotten across to you that the change is real, but this is the same kind of sea change, and we as an industry are going to have to develop new techniques in these new ways now in the same way we did then. So if you think we're not listening, I'm sorry, but I think there's a disconnect on our mutual understanding of the size of this change.
A (Warren): ...
A (Spencer): ...
A (Alia): We are listening, and one of the things that the IESG does is help with the conversations and the introductions. I'm very happy to see large enterprise and large operators coming to try to participate.