
ICANN84 | AGM – Root Server System Advisory Committee Meeting
Tuesday, October 28, 2025 – 13:15 to 14:30 IST

DANIEL GLUCK

Hello, and welcome to the RSSAC Caucus Meeting at ICANN84. My name is Daniel Gluck, and I am the participation manager for this session. Please note that this session is being recorded, and is governed by the ICANN Community Participant Code of Conduct, the ICANN Expected Standards of Behavior and the ICANN Community Anti-Harassment Policy. Please observe the following guidelines to participate in the session. I will also post them in the chat for your reference.

If you have a question, please raise your hand. We do have a Q&A pod enabled, I believe, but I think you can just use the chat if that is easier. And when you're speaking, please state your name for the record and speak clearly at a moderate pace. I will now hand the floor over to RSSAC chair, Jeff Osborne.

JEFF OSBORN

Hello. Good afternoon, good morning, good evening and all the ships at sea. It's another caucus meeting and I literally just got it pulled up. So, let's see where we are on the agenda. Ah, introduction. We have some new caucus members, and I'm

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going to get help from either Daniel or Ozan or Andrew on a list, or are we just going to say, present yourself? Okay.

So, if the new people want to introduce themselves, this would be a good time to do it. And if you don't, we understand as well. All right. Well, welcome to the group. We're going to take a look at the agenda now, I believe. Daniel, are you the one driving this? Okay, so I'll just look over there. Agenda. This looks like a pretty normal agenda, so let's do the attendance. And we will start with Brad. Brad, you want to just state your name. We'll go around the table.

BRAD VERD

Brad Verd, Verisign.

ROB CAROLINA

Rob Carolina, ISC.

RAO NAVEED BIN RAIS

Naveed, RSSAC Caucus.

KEVIN HILDEBRAND

Kevin Hildebrand, University of Maryland.

JEFF OSBORN

Jeff Osborn, RSSAC Chair.

KENNETH RENARD

Ken Renard, RSSAC.

WES HARDAKER

Wes Hardaker, USC/ISI. I apologize, I have to leave early.

OZAN SAHIN

Ozan Sahin, RSSAC support staff.

WARREN KUMARI

Warren Kumari, SSAC, and I help run B-root.

ANDREW MCCONACHIE

Andrew McConachie, RSSAC support staff.

YAZID AKANHO

Yazid Akanho, RSSAC Caucus.

FREDRIK LINDEBERG

Fredrik Lindeberg, Netnod.

HIROFUMI HOTTA

Hiro Hotta, WIDE and JPRS.

SHINTA SATO

Shinta Sato, JPRS, Caucus member.

KIM DAVIES

Kim Davies, IANA.

MATT LARSON

Matt Larson, ICANN.

DANIEL GLUCK

And Dan Gluck, RSSAC support. And then online, we also have a number of participants, and I can read their names aloud. Give me one second. We have John Augenstein, Karl Dyson, Abdulkarim Oloyede, Afshaan Abdul, Ayeda François Daniel. Oh, Massioudath, that's one of our new RSSAC Caucus members in the chat. Eddy Winstead, Hiro Hotta, Jeff Osborne, I don't need to repeat those, I guess.

John Bond, Kazuhiro Kitamura. Who else? [Larry Bogan]. Oh, Moe Bo-Moeud, that's a second new RSSAC Caucus member, Moritz Müller. Ray Bellis, Robert Story, and Russ Mundy. I think that's all of them. If there's anyone else, feel free to send a chat in, let me know, but thank you everyone for the attendance.

JEFF OSBORN

Thank you, all. I think I skipped two, went to three, and back to two, so let's go to four to keep the confusion up. In recent

publications, I'm not sure what we want to say about the RSSAC statement on the GWG. We had a short statement of support. Brad, can I put you on the spot.

BRAD VERD

Yeah, with my GWG hat on, there was a document that went out for public comment, and the RSSAC made a comment to the documents, the output of the GWG. And as Jeff said, they were supportive, and the GWG's currently working through all those comments.

JEFF OSBORN

Thank you, Brad. We appreciate it. Robert, I guess, security incident reporting published. Any comment?

ROBERT STORY

Well, Ozan had asked me to talk about it, so I have a very brief summary. So, this document came from a criteria in 058, criteria for success of RSS governance structure, which has a criteria for the governance structure to provide security incident oversight and disclosure obligation reporting. So, the 062 is the RSSAC's advice to the governance structure for implementing that criteria, and it's kind of one line summary of the major sections of the document. It defines four different types of incidents that can happen for the RSS, which are

availability, data integrity, operational integrity, and confidentiality.

It then goes on to kind of define a somewhat wishy-washy threshold for reporting, which is events that have a material adverse effect on the root service. So, that intentionally was not well-defined, and goes on to talk about what should be included in reports from the RSOs to the GS. And then the last major section talks about how the GS can support the RSOs and meeting the reporting requirements, and a little about what the process and the interaction between the two might be. So, that's—I don't know. I think he said three minutes. Hopefully, that was less than three minutes, but...

JEFF OSBORN

You beat your number, Robert. Well done.

ROBERT STORY

All right.

JEFF OSBORN

For the third item, I don't see Dwayne, but Ken is gesturing madly.

KENNETH RENARD

I just wanted to make a quick comment. This is Ken Renard. About the security incident reporting. Just to put this into context that this was work that the caucus did, giving advice to the future governance structure. So, it's not a mandate of this is how security incident reporting works. This is the exact thresholds and everything. It is just advice that RSSAC Caucus is preemptively developing and handing off to the governance structure. So, when and if it's ready to formalize security incident reporting, they have input from this group. Thanks.

JEFF OSBORN

Thank you, Ken. I'm putting everybody on the spot today. Since I saw Duane isn't here, Ray is in the online, do you mind giving us an update on the guidelines for changing IP addresses, Ray, or...?

RAY BELLIS

I can try.

JEFF OSBORN

Fair enough.

RAY BELLIS

Honestly, not sure what to say on this one. I mean, we completed the work, and actually, quite some months ago now. In fact, prior to the last ICANN meeting. I'm not sure. I'm

sure RSSAC must have met since then, actually. But yeah, it's been published, RSSAC61. I've heard good commentary from outside of RSSAC about it. It's done. It's finished. Obviously, I'm not sure what to say.

JEFF OSBORN

I appreciate it, Ray. Work with me, I got 75 minutes to fill.

RAY BELLIS

Oh, I don't, so.

JEFF OSBORN

Duane, we're going to have an equal opportunity for you to feel put on the spot. Do you have any comment on the recently completed publication?

DUANE WESSELS

It's a great document. You should all read it. Really enjoyed working on it. No. No, I think it is a good—I'm proud of the work that RSSAC did on that, but I'm going to assume that Ray covered all the relevant technical details of it.

RAY BELLIS

I have not. I actually didn't. I think people should read it. It is a good document. It's quite straightforward. Yeah, there's really nothing contentious in it.

DUANE WESSELS

I'm looking forward to the next time one of the root server operators changes an address and actually needs to put that document to the test. That'll be fun, so.

JEFF OSBORN

That could be a while. All right. In caucus engagement, update from membership committee. I'm the chair of the membership committee too, which always feels a little odd. I'd like to remind everyone we would really like it if we could keep the SOIs up-to-date, especially the information about your current employer. We've had people where it's awkward to implicitly be speaking for an organization you're no longer with.

So, I'll just ask you to be sensitive to the organizations in the room that are kind enough to support most of us flying here and feeding us and all that kind of thing. So, if you would keep up on SOI changes, especially a change in employment, that would be helpful. On the membership survey results, I think Ozan is much better suited than I on this.

OZAN SAHIN

Thank you, Jeff. This is Ozan for the record. And if we can make the PDF a bit bigger, so that it's visible. Speaking of keeping the statement of interest documents up-to-date, if you participated in the survey this year, you saw a new question or request. A question actually asking whether your SOI is up-to-date, so that's something new. I think it worked a bit because some of the caucus members sent support staff their updated SOIs. So that's one thing in the survey.

We received 27 responses this year. This is a bit lower than the previous three year's figure because we had the past three years always about 30 responses. One question that we asked was whether the participants participated in RSSAC Caucus meeting before or not. And only one participant said they didn't attend before and all other 26 did. There was a question about—if you can scroll down below. How frequently should RSSAC Caucus meetings take place? The most popular answer was to keep the current seconds of having an RSSAC Caucus meeting at every ICANN Annual General Meeting and every other ITF meeting.

And currently, RSSAC Caucus is meeting at even-numbered ITF meetings and ICANN AGMs with 19 people supporting that. That's also a common theme, a common popular response that we saw in the past year's surveys.

The third one is, where should RSSAC caucus meetings take place? Again, currently this is ICANN and ITF. And the most popular with 21 responses was, again, keeping ICANN and ITF meetings. Alternatives were ICANN meetings only, ITF meetings only, and RIR network operator group meetings. Three people supported that. Another question was whether the respondent participated in an RSSAC Caucus Work Party, and only two respondents did not attend the caucus work party before. Others did, which is corresponding to 92 percent.

The fifth one was how the participant contributed to the RSSAC Caucus Work Party among the options here, being a work party leader, writing texts, reviewing texts, participating in discussions were there, and multiple options were possible. So, we had two work party leaders participating, 12 wrote texts, 21 respondents reviewed texts, and 24 participated in discussions.

We also wanted to ask the difficulty of contributing to RSSAC Caucus Work Party because some of the open-ended responses to this question is, they're helpful. And three people found it very easy to contribute to caucus, 10 thought it was easy, 10 were neutral, and two participants found it complicated. And if they didn't participate in an RSSAC Caucus Work Party before, we wanted to ask why, and the answers here are no time to contribute, no interest in topic, no

technical experience or knowledge in topic, and communication barriers like language or teleconference issues, and we have other as option.

So, the most popular responses here were no time to contribute, no technical experience in topic, and we have some other responses as well in an open-ended form, so we can discuss this later when we look at the free-form text responses.

Then another question was, would you like to continue as a member of caucus? Everyone said yes. I think we only had one, no response to this question in the previous year or two years ago. And then the question I mentioned in the beginning is your caucus statement of interest is up-to-date, and again, six participants said no, and sent the updated SOI to the support staff.

We also asked if the participants had suggestions on the future work items for the caucus, and the RSSAC Admin Committee took a look at the list of items that were suggested. Dan, if you can pull up the free-form text responses and make it a bit bigger, we can also look at that. RSSAC Admin Committee reviewed that and reached out to caucus members who suggested topics there. I think later in this meeting, we will be discussing one of the suggestions there.

And towards the end of the year when we circulate an email to figure a list of potential future work items, so we can also

include that and ask for further input from RSSAC and RSSAC Caucus on whether this would qualify as potential topics. Anything, Jeff, Ken, you'd like to add?

JEFF OSBORN

No, pretty thorough job. Thanks.

KENNETH RENARD

Yeah, this is Ken. I thought that there was some good value to the survey. We always want to improve engagement. There's a lot of very valuable expertise beyond the RSO-centric nature of things, so getting that expertise from these differing viewpoints is fantastic. Some of the things we've identified are time zone challenges, which is nothing new, nothing unique to us, but something I think we could probably address a little bit better, as well as using the mail list for updates.

A lot of these work parties can get very deep and technical, and the context and the history of the previous discussions become very important, and a lot of times we end up rehashing the same issues over and over again. So, having more information available, especially for people that miss a meeting or newcomers, to be able to catch up and engage on some very technical, sometimes very specific topics. So, I think that could be improved by using the mail list more. Thanks.

JEFF OSBORN

Thanks for that, Ken. Switching back to the agenda—whoops, Naveed, I'm sorry.

RAO NAVEED BIN RAIS

This is Naveed. So, I just have a few remarks about the survey, if you can allow me, right? First, between the question number seven and around that, where we ask people whether they have participated in the work parties, I find that question a bit in conflict with the next question that we ask, what difficulty you found while participating. And if you compare the results, there is not a coherence between them, right? Because most of the people, they said that they participated, but then around 40 percent said that they had difficulty, and they don't participate, right?

So, that has to be seen from maybe a different perspective and we try to update the survey in a way that gets the accurate information from our audience. And noting that the percentage written next to each of them, some of them were incorrect because especially on that page that I'm referring to, maybe question seven or something, it's written 10 percent, 40 percent, total are 15. So, each of them is assigned 10 percent, so that makes 50 percent in total. So, that may be an error in

the computation as I understood that. So, this is one of my remarks.

The second is the survey should also include, I guess, and this has been a long debate from me to RSSAC Caucus. I request that the survey should also honor and we as RSSAC should also honor the contribution that we make, different people make in different other capacities other than work parties because we always make it around work parties, right? Maybe the cross-community groups that you participated or an appointment that you participated. So, the survey should also get a reflection of that because I know that going forward, this will be playing a role into the CIP itself once you have this kind of continuous improvement program work in place.

So, that contribution and these surveys are going to be super important as feedback, as an input to those CIP programs. So, I just want RSSAC to consider. Consider that as a contribution as well, right, as a whole, right? We have that issue before as well on ITF kind of selection process, right, where the bylaws on the rules said that, only work party contribution plays a role in selection. So, I just wanted to highlight that regarding the survey as well. Thank you.

JEFF OSBORN

Naveed, that's a really good point. We're very slow to change the questions because then you get better longitudinal results.

If you have different questions every time, it gets harder. And so, I have really kept people from adding questions, but you make a great point because there is much more than just work group involvement now that should be involved in that. That's obviously something we should throw in. So, good point. Thanks. And thanks for all the work you do. You should certainly get credit for it. Anything else on the existing recent publications, or I mean the caucus engagement?

DANIEL GLUCK

There's a hand from Robert Story.

JEFF OSBORN

Robert?

ROBERT STORY

Thanks, Jeff. I just wanted to add to something that Ken just said. And it was something that I had planned on bringing up in the meeting as well. Having been involved in a bunch of work parties, leading and participating, a thing that keeps coming up is because of the nature of the parties and it being volunteers and they're not being like a selected group of people discussing this, it's basically whoever shows up at the calls. And especially for the longer running work parties, the flow of people coming in and out of the call varies. So, as we're going through the

document, the work party leaders need to make decisions on consensus based on what's going on at the call.

So, when people come and go, it brings up issues with the consensus because people that weren't there when a decision was made are later making comments on the same thing. So, what Ken was saying about people missing a call, which calls aren't required, so you're not really missing. They just didn't make one. And something that I've talked about with Andrew in the way that the Google documents work where we do the development is, once you accept or reject a change, the context goes away in the document. You have the new text. You don't have a whole lot on how that decision was reached.

And so, this causes a lot of issues to come up again and again. And so, I don't know of a good solution for this, but I think it's something that we should think about and maybe talk about. The only thing that I came up with is maybe taking advantage of AI to summarize meetings and to make it part of the work party process to record decisions. Maybe not every little change in verbiage, grammatical type stuff, but the bigger decisions. So, there is context to be recalled when a particular issue might come up again. So, I just wanted to throw that out there since Kim brought it up. Thanks.

JEFF OSBORN

Thanks, Robert. Any input or commentary?

KENNETH RENARD

This is Ken. Well said, Robert. Yeah, that's an issue. Maybe Warren can tell us how SSAC has solved that.

WARREN KUMARI

No, Warren was going to say, when you solve that, please tell SSAC. It's a problem everywhere, right?

JEFF OSBORN

All right. Well put, Robert. And it's something I think we can all strive to try to improve on. The continuity is definitely a challenge in these volunteer organizations. All right, moving—not moving on. Warren?

WARREN KUMARI

So, one thing which we've noticed in a few places that makes it worse is if you alternate time zones, you often end up with one set of people coming to one set and then another set of people coming to another set. And then consensus flips 180 degrees, or depending on if you schedule it every couple of weeks, you end up again with the same problem. Half the people show up to one, and half the people show up to another, and there's no across.

JEFF OSBORN

Thanks for introducing me to the concept that doing this stuff across time zones is actually complex. I was unaware, and I'm now really realizing, wow, that's got to be hard. That was sarcastic. I was trying to be funny. That sounded mean. I didn't mean it. I'm sorry, okay. Sorry. More than I care to admit.

The next is interesting. Who's the work group leader of 001 version 3? Robert Story? Okay. Hey, Robert. We had a meeting yesterday.

ROBERT STORY

Yes.

JEFF OSBORN

Two days ago. I have gone to none of this set just because at some point I had to limit what I do. Did you want to mention how that went or...?

ROBERT STORY

I did, and in keeping with the way you started the meeting and doing things out of order, you skipped over the agenda review. And I do want to add something to that based on this meeting.

The meeting kind of went sideways. We did not make any progress in the document. We didn't even get out of section 1.

And so, it's kind of on hold while some other issues are resolved, which brings up the item that I wanted to add to any other business, which is after that meeting, I went looking for some kind of document that defined how the work parties work, processes and procedures. And I asked Andrew for a pointer, and he came up with the document on RSSAC, which has some very detailed explanations about some processes like voting and whatnot, but very little on how work parties are supposed to work.

And I went up and tried to find something from ICANN and only found something from, I think, a GSNO study or something that talked about work parties. But I think they're working groups, which is kind of different than what we're doing. And so, I think that's something that needs to be defined, so that everybody can follow that. And so, I think RSSAC will be hearing more on this as people are doing things different ways, because I don't think there's a clear way of the way it's supposed to be working. So, that's both my summary of the meeting and the request for the any other business topic.

JEFF OSBORN

Daniel, can you put that in the AOB? Got it. Okay. Dare, I suggest we need a work party to discuss how work parties work? Having spent half of my life seemingly in the last few months on the review of reviewing reviews, recursive studies

are in vogue now. No kidding. Oh, sorry. Sorry, guys. I'm looking at three documents. Russ?

RUSS MUNDY

Yeah. Thanks, Jeff. I was going to make a comment on what Robert just brought up. But if we're going to discuss it later under AOB, I'll defer till then. If you want to take it now or later.

JEFF OSBORN

Why don't we do it then? We can have the whole cohesive discussion. I think that's going to be an interesting one. Thanks, Russ. Abdulkarim?

ABDULKARIM OLOYEDE

Yeah, thank you. I just wanted to add to what Robert said that what we now agreed because of the way the meeting was going was to probably in a way suspend what we're doing on the working group until we have a clarity. So, just to add to what Robert said.

JEFF OSBORN

All right, fair enough.

ANDREW MCCONACHIE

Just to add on to what Abdulkarim just said. So, I took an action item at the end of the meeting to draft something for the work

party chairs and the shepherds, like a paragraph or two, about the status of the work party. How we were stuck. And then when the work party chairs are comfortable with that, we'll send that to the RSSAC and then discuss it in the RSSAC more generally.

So, basically, the RSSAC will get something from the work party with a request like, hey, guys, how do we move forward? But that hasn't happened yet.

JEFF OSBORN

Okay. Thanks, Andrew. Anyone else? Andrew, that's the old hand. Good. And the next item, Andrew.

ANDREW MCCONACHIE

I don't see Hafiz or Baojun.

JEFF OSBORN

Oh, okay.

ANDREW MCCONACHIE

So, I'll do it. I'm going to share my screen real quick. So, this is a document repository that we use Zotero for, and this has been kind of something that's been living in the background of the RSSAC Caucus for a while. I think we've had it for like three years. I see that Hafiz and Baojun are regularly are adding

documents to it. And basically, this is just a massive collection of semi-sorted research about DNS stuff. Particularly about the root server system. I'll put the link in the chat if anyone is interested. The coordinators for this are Hafiz and Baojun and they do a pretty good job. You don't hear from them very much. But I can tell from the activity on this that they are kind of adding documents to this every month or so.

So, this is just to let all the caucus members, especially new caucus members know that this exists, and this is a resource. And maybe if you know about research papers that aren't in here and you'd like to add them, I guess, the people to reach out to would be Hafiz and Baojun, or me. And I see a hand from Warren.

WARREN KUMARI

Can you share the invite or similar to the Zotero org? We have a similar one for SSAC, and there needs to be an invite thing or link shared or something.

ANDREW MCCONACHIE

Yeah, there's a URL for this thing. And then you get read access.

WARREN KUMARI

So, Zotero is both a website, but there's also an app. And for the app to connect, you have to share some other token-y

thing. And then the app can connect to it, and you don't have to use it through a web browser.

ANDREW MCCONACHIE

Yes. Yeah.

RUSS MUNDY

Warren, this is Russ. Can I interject a little bit here?

WARREN KUMARI

Yes, please.

RUSS MUNDY

This one is set up slightly different than the SSAC one, and in fact, the one that I built for RSSAC documents. In as much as the documents that are referenced in this listing are not actually in the Zotero collection that you can get to from the URL. What you reach from going to the Zotero, and you can use this with the Zotero apps just by plugging in the appropriate URL. But what you get when you click on one of the—open the attachments is you actually go to the original document on the website, as opposed to a Zotero-stored version of the document.

So, that's why this one can be completely public. And it is set up so that literally, if you have the URL, you can see everything

in this collection, and you don't need to do any of this, Mother May I approval back and forth, la-di-da, that we have to do for the collection I built for SSAC. And in that collection, even though the information all originally sourced from the ICANN website, the way the Zotero works is if you have the actual documents attached in Zotero, then they require you to use—I don't remember exactly what their terminology is, but that's where you have to do the request and the approval of the request. And you have to have a formal Zotero account.

So, for this completely public thing, you don't even need a Zotero account. You just need the URL. Sorry, if that was a little too much detail, but it's a great collection. Thanks for all the work that the two guys that are the main maintainers do on this.

ANDREW MCCONACHIE

Thank you, Russ, for all that context. I was kind of caught flat-footed here, and I really appreciate you stepping in and explaining how all this works. So, thanks a bunch. And unless there's any more questions, I guess, we're done with this item.

JEFF OSBORN

Yeah, thanks for clarifying that, Russ. I was definitely confused. Wait, Duane.

DUANE WESSELS I have a question. I feel like I may have asked this question before. Is this Zotero collection linked from the RSSAC web pages on ICANN? Is it easy for people to find?

ANDREW MCCONACHIE No. I think the answer to both of those questions is no.

DUANE WESSELS Well, could it be at least linked from an RSSAC Caucus page or something like that?

ANDREW MCCONACHIE Yes, the answer to both of those questions is yes.

JEFF OSBORN Is that an Andrew action item?

ANDREW MCCONACHIE Yes.

JEFF OSBORN All right, excellent. Thanks again. Always the staff does such a great job doing this. It's shocking when they're not three steps ahead of us.

This is an interesting one. Item seven, potential future RSSAC work items. I've thought of one since we got here. Is it a crazy idea to have a work party about how to do a work party, or should we wait until Andrew has a result before we put that cart in front of that horse? I was suggesting a work party to determine how a work party should function absent it existing anywhere else.

ANDREW MCCONACHIE

I think we're jumping ahead. This discussion is about new ideas that were presented in the RSSAC Caucus survey. That's this agenda item, I think.

JEFF OSBORN

My apologies.

ANDREW MCCONACHIE

And you can kick it over to Ken, I believe.

JEFF OSBORN

I'm kicking it over to Ken. Ken?

KENNETH RENARD

All right, thanks. This is Ken. So, the past two years or so, maybe three years, we've had this question on the survey open-ended. What do you think the RSSAC Caucus should study? I

thought this year we got a great collection of answers. So, for those that filled this out, thank you. So, this is what should the caucus work on. These are ideas. Some of these are issues that we have studied before, and we've had answers, and we've published. Some of these are issues that have been discussed in similar forums and potentially even just closed. We've thought about this, we've published it, we're done.

But when we're getting input from new caucus members or caucus members that aren't in every part of the RS, Root Server Community, it's good to hear these things. As some of these items that have been discussed before, maybe the answer is we've looked at this, we're done. No, thank you. Maybe the answer is we've studied this before, we've published this. Let's take another look at this, because we have maybe new members that have different perspectives, or things have changed over time since we've looked at this topic.

Has enough changed, or are there enough new perspectives to reopen this issue, or maybe it's a side conversation, maybe it's an update to an existing document, but I think it's good to have the caucus members that brought these up present their ideas. Hopefully get some of the context from the people that have worked on these issues before, if they have. And let's discuss, hey, maybe there's something new worth looking at that. With

that, Yazid, would you want to talk about the topic that you proposed? Okay, Yazid.

YAZID AKANHO

Thank you, Ken. Yazid, again. So, of course, we know that the resilience and the stability of the internet matters to all of us here. And when it comes to the root server system in general, each of the root server operators decide how they want to set up their own instances and the criteria, basically, of deployment. However, when we look from the end-user's perspective, what really matters is the availability and the reachability of the root server system in general.

So, there have been a couple of questions and ideas. But from the little that I know, the question that always comes to my mind is, can we measure the latency, the reachability, to the root server system in general? And what can we learn out of it mostly for the policymakers in the different countries?

I'm talking from my second hat, which is technical engagement. We go on the field. We go to different places and we engage with operators. We engage with regulators. We engage with basically all the stakeholders who have a say in making the internet more resilient and more stable in the country. So, from different locations, we see different things when we measure,

because at the end of the day, only data matters, right? When they see data, they understand what we are talking about.

And sometimes, it's quite interesting to see that from the different measurement tools or platforms that exist, we have some interesting data. And of course, we know that the coverage is totally different from a country to another or from a location to another. So, something that I was curious to know about is how feasible it is to measure the latency continuously, to measure the latency to each root server identity to provide a sort of visualization, a sort of map, and to provide also some, let's say, advice to policymakers on what could we do to improve the local resilience of the internet.

Should you go for local instance deployment, or should you go for hyper-local, for instance? So, we know that from the technology perspective, there are multiple answers. But how can we, based on data, advise people? So, I think that is really the question that matters. And most of the time, when we engage, people ask for data. How can we know where we stand in from our own perspective? You talk about the resilience, having connectivity to multiple root server instances, et cetera, et cetera.

And thanks, Ozan, for pointing me to this very nice website maintained by ISC, which continuously do some measurement based on the RIPE Atlas probe. But at the end of the day, I was

just throwing the question on how can we continuously have interesting data which says something about the reachability from the resolver's perspective to the root server instances in general. Should we measure the latency continuously, or should we use other sort of criteria to measure that? I do not have the answer. And is it relevant also to do such kind of measurement? So, those are the quick questions that I have in mind. Thank you.

JEFF OSBORN

Those are excellent questions. And ironically, the guy who wrote the ISC app is the first one in line. So, Ray?

RAY BELLIS

Yeah, hi. Thank you, Jeff. I'll try to speak quickly because I've just got another meeting now. Yeah, latency is a very good indication. It's a good proxy measurement for how well the root system is performing in the local area. I'm glad to see that the last speaker was aware of the tool that I've written that uses RIPE Atlas data. And unless you use something like potentially the [inaudible] plotter mechanism, you won't get better measurements than you can get with RIPE Atlas, which has about 10,000 probes all around the world.

I would however caution that ultimately, one should not be looking to improve the latency for its own sake. And what really

matters for availability and resilience of the root system, in my opinion, is locality of the traffic and keeping resolver traffic going into the closest root server as possible. And achieving that mostly depends on having good pairing. I have several examples that I don't have time to go into now where we have root server instances and other RSOs have root server instances, but we have national carriers that are not using them because they don't pair with those networks and those root server operators.

Ultimately, to get the correct level of the root service, you've got to fix your pairing first. And then once everybody's actually got right good pairing, then we should be looking at where potential [inaudible] could go. That's me.

JEFF OSBORN

Thanks for that, Ray. And I realize you have to run. Thanks for attending when you could. I believe Lars is up next and Abdulkarim.

LARS-JOHAN LIMAN

Thanks. Lars Liman here. A couple of comments. First one is measure from where? Because we cannot measure from the entire world at the same time. And what Ray said, the RIPE Atlas system is the best one I know of as well. And in addition to Ray's excellent tool, there is also the DNSMON project at the

RIPE NCC, which gives you graphs over delays and whatnot. So, that's one point.

Then I would actually like to disagree with you. Data means that we understand. Usually not, because the people who read the data don't really understand the context in how it's measured. For instance, it doesn't matter at all how my laptop here reaches the root name server because it never tries to. The important thing is how the resolver I use reaches the root name server. So, that's where the points where we should do the measurements, if at all.

So, the important thing is really to measure the time from your computer to your resolver because that's where the timing is important. And the resolvers are operated by other people. And on top of that, I would just like to agree with Ray about the pairing. That's the really important thing to make the network operators that sit between resolvers and authoritative servers to understand that the delay is actually depending on the pairing system and what it looks like. Thanks.

JEFF OSBORN

Well put, Liman. Abdulkarim and then Hans Petter.

ABDULKARIM OLOYEDE

Yeah. Thank you very much. Let me first of all commend Yazid for this. What I wanted to mention, actually Ray mentioned

one part of it, which is to look at the local perspective and to also mention that I could remember that we did some work on the working group on local perspective on how to do some of these measurements. I could remember that I chaired the working group. So, I think Yazid can also look at that document on local perspective.

JEFF OSBORN

Thanks, Abdulkarim. Hans Petter and then Ken.

HANS PETTER HOLEN

Yeah, thanks. Hans Petter here. Since RIPE Atlas was mentioned, if anyone has suggestions for new features, a different way of measuring either in RIPE Atlas or DNSMON, I mean, feel free to reach out, and I'll pass that on to the teams. They have focused a lot on improving of the infrastructure the last couple of years. And now is actually the time to start to inspire them into new functionality and things. So yeah, I just wanted to pitch that.

JEFF OSBORN

Thanks, Hans Petter. Ken?

KENNETH RENARD

So, Yazid, as a sort of ambassador trying to go to these places and do outreach, thank you for representing the root server system and how to improve DNS with respect to the RSS.

So, one thing that I can think of is get them an Atlas probe because it's well-managed infrastructure. Not only can they see their stuff, their measurements, we can see it through Ray's tool. So, that has a lot of visibility. A lot of people are watching that. So, by getting a probe, they can help themselves and have other people help them, too, in the grand scheme of things.

Again, latency is not the biggest issue. I would hope that doing DNSSEC validation is higher priority than looking at that. But to me, when I was talking about with Yazid a little earlier, this sounds like the underserved community issue problem study that we had looked into before. That work party didn't go anywhere, or it closed down. It was before my time. But I was wondering if there's anybody here that had insights from that, why it didn't go anywhere, what were the issues that might apply to this? Thanks.

JEFF OSBORN

Thanks, Ken. Andrew?

WARREN KUMARI

Oh, Andrew's proxying for me because I used this.

JEFF OSBORN

Warren?

WARREN KUMARI

So, just to respond to Lars' measuring-from-where point, yes, A, it's clear that latency isn't actually that important. But the note that you made, measuring from your laptop is not useful. Measuring from a resolver is. What some people do is, if the root servers measure back to the resolvers that query them, you get basically the same view, right? The resolver to the root server is the same as the root server to the resolver. And some set of operators are doing that. But I don't think we have a general repository of latency from root server operators to resolvers.

So, basically, when a resolver queries a root, if you keep a log of those and at some point do latency measurements in the opposite direction, we could have a repository of where resolvers are and latency from roots to resolvers to better do placement. Basically, flip the measurement the other way around because RTT from resolvers root is the same as root to resolver.

I mean, yes, you're going to have to guess what's actually resolver because you can't really tell because random people

send you queries. But it would be a useful aggregate data set for us to build.

JEFF OSBORN

Liman?

LARS-JOHAN LIMAN

Yes and no, but you have to take NAT into account as well. That's not a yeah, yeah. To me, that's a really complicated factor to me.

WARREN KUMARI

Probably, most of the resolvers aren't behind NATs. Machines are. Resolvers are more generally publicly exposed because people have learned putting them behind a NAT's a bad idea often. It's not perfect, but what are our measurements are? So, your laptop is, your resolver is almost definitely a public address. And if it's not, it's likely close to the NAT in terms of network topology and latency.

LARS-JOHAN LIMAN

That's a bold statement to make, I think. But I hear what you're saying. I'm not denying it, but I would like some firmer confirmations of that before I believe it, but thank you.

JEFF OSBORN I forgot your name.

YAZID AKANHO Yazid.

JEFF OSBORN Yazid. Don't forget it. Go.

YAZID AKANHO Thanks, Jeff. Thanks, everyone for your input and comments. And in fact, I was at RIPE NCC office in August, and I was lucky to attend one of the meetings to put some contributions from my perspective being a RIPE Atlas Ambassador. And I'm helping a lot also to distribute the probes in some part of the world that we could call underserved regions because there are basically no RIPE Atlas probes available there. I can give a lot of stories behind this.

And back to the routing policies as well, I totally agree with you. The concern here is about providing data to those who decide, those who can take action. Most of the time when we go to the field and we speak with engineers, they understand. And they do whatever they can do. But sometimes they also need a higher level of decisions. And this is most of the time where they need some practical data, which do not come from their own measurement, but that come from independent sources

of data that they can just put on the table and say, we are not the ones who measure this, but this is what is being reported about our own network. And based on the best practices, this is what we could do to improve the data. But again, I just throw this into the community and see what could be done, if anything could be, of course. Thank you.

JEFF OSBORN

I actually had my hand up, so I'm going to take a piece. My opinion on this has been changing. Where a year or two ago, I just was insistent that you're asking the wrong question. Latency doesn't matter. This is so infrequent. It's all at the resolver. But I'm starting to wonder whether that is not really being harmful.

I happen to have a tool here that Ray won't let me give away. But the latency from here to most of the root servers, to all of them, is under 100 milliseconds and several of them are under 10 milliseconds. It's all really good. So, if we're saying it doesn't matter, but the news is good anyway, it kind of looks like we're covering up for something.

So, I think to the degree that we could reliably report on what those latencies are, it's a pain in the butt. It isn't as useful as people think. It would require all kinds of addressing. And as Lars said, data isn't just data. Sometimes data is misinformation waiting to be used by a person who doesn't

fully understand. But I think we shouldn't let this go. I think there's something in here that is really useful and valuable, and it's hard. But if it's hard in this space and this group doesn't want to try it, I don't know who else will. Russ, you're next. And then Hans Petter.

RUSS MUNDY

Yeah, thanks. I'm trying to think back to that attempt at an earlier work party to come up with something of this nature. And my best recollection is that the discussion that's going on today is really a microcosm of the discussions that occurred in that earlier attempt at a work party, where it was decided eventually that it was simply not feasible to come up with a useful set of criteria and resulting data that would provide information.

Because there were so tremendously many different perspectives and so many different types of data and ways to measure various things that eventually, I think that was the reason that the work party completed without producing a product is that the fundamental pieces couldn't even be written down and defined. Not saying that this hasn't changed, but I believe that that was the basic problem on the earlier attempt. Thank you.

JEFF OSBORN

Thanks, Russ. And I'm going to cut the queue, because Robert's got a bigger issue to go, and we've only got 15 minutes left. So, Hans Petter, Ken, and then Andrew. Oh, Ken and then Andrew.

KENNETH RENARD

Okay, I was actually just trying to wrap this up as a discussion item. So, we went immediately into engineer mode here, which we normally do. But hopefully, this has been helpful to the topic. But this was supposed to be a discussion of whether this should be taken on as a caucus work item.

My sense, and I hear other people's opinions, is that not right now. I think Yazid, you've gotten some input here. If you want to pursue this as a caucus work item, the next step would be to develop a statement of work. And I'd be happy to work with you if you do, or just to find out more information. So yeah, that's where I was going with it.

JEFF OSBORN

Well put. Andrew? Warren?

WARREN KUMARI

I still can't raise my hand even with the app. But I mean, I was just going to point out that people do seem to still care about latency. And if it is really important to them, if you do local

route, your latency is zero, right? That's an easy number to measure. It's zero.

JEFF OSBORN

That's an excellent argument. I've been discussing local root with a couple of people this week, and I was surprised at the pushback. Where it was like, I don't want to do the work. I was like, "Are you kidding?" I did not see that coming.

WARREN KUMARI

It's built in to bind, and unbound, and not. And thank you, bind. It's a single line, technically two lines.

JEFF OSBORN

Glad to help. Worth every penny you pay for it. Somebody help me with where I am. This is why I get scattered all over the page. I can't read. Where are we? Metrics? AOB, okay. Ken?

KENNETH RENARD

Okay. We've got 13 minutes left. The metrics one was an idea that I had come up with about, after reading a lot of the input, the idea of a document discussing very abstractly metrics of the RSS. Latency doesn't really matter that much at that level, and pointing out how we measure this stuff. I had more notes to share, but I think I'd rather yield the time to Robert's topic.

JEFF OSBORN

All right, fair enough. Thanks, Ken. Robert, how do you want to do this? Do you want the floor?

ROBERT STORY

I mean, I don't think we have time to really get into this. I just wanted to bring up as something that I think we need to talk about. And I did go and find it was the GNSO Working Group Guidelines was the document that I found. It talked about dispute resolution. It talked about judging consensus. It talked about a whole bunch of things that we don't really have defined. And it's a slightly different context as well.

So, I think your suggestion of a work party to define how work parties work, while I think you're slightly sarcastic or humorous. And I don't know if a work party is the right way to go. I think maybe this is maybe something that needs something more like an organized definitive group of people instead of calls where people come and go the way that work parties work.

And that it needs to come from the top down. I mean, this has to be something that has been discussed ad nauseam all over. We just need to consolidate something particular for RSSAC and the little differences in how we do things and other people do things.

JEFF OSBORN

Thank, Robert. Andrew's here offering to jump on the hand grenade. And then Duane has his hand up.

ANDREW MCCONACHIE

I'm going to suggest that we continue talking about this. But basically, we have next steps, which is the work party is going to send something to the RSSAC, so that we can start a conversation about that. And I think from there, we'll jump into this question of how do we want to run RSSAC Caucus Work Parties differently or what kind of documents we need to produce or something. So, I'm going to suggest, actually, that this is probably going to be a larger discussion. And we should just postpone it until we've completed the next step.

JEFF OSBORN

Duane?

DUANE WESSELS

Andrew, by next step, do you mean the next step for RSSAC 001 V3 work party?

ANDREW MCCONACHIE

Yeah. Let's document what's going on in that work party right now for the RSSAC. And then based on that, we'll move into

this discussion about how we want to reconfigure RSSAC
Caucus Work Parties

DUANE WESSELS

Okay, yeah. I think that's fair. I was going to say that I think this will be a good discussion to have, Robert's ideas about how work parties work. I think that's a very good discussion to have. I was going to suggest that we have maybe some dedicated caucus meetings about it, but not rise it to the level of a new work party. Just some brainstorming or open discussions and come up with some proposals maybe, but not the formality of a work party. I think we should have that discussion no matter what happens to 001 work party, but certainly afterwards is a good idea. But I think we should have it anyway.

JEFF OSBORN

A lot of nodding around the table. Russ?

RUSS MUNDY

Yeah. Thanks, Jeff. I wanted to, I guess, put on my liaison from the SSAC hat this moment and say, the SSAC does have in their procedures document descriptions about work parties and how they should work and so forth. However, just because you have them doesn't mean they're that particularly useful, nor that you're going to actually follow them. RSSAC has done this work party thing for 20 years. And we're in the RSSAC realm

constantly trying to come up with ways to make them more effective. And sometimes it works better than other times. And sometimes we find new things that really help.

But oftentimes, it's not because there's a written process or procedure. It's that the people involved in both the work party and in the parent organization have gotten together and talked about how's the most effective way to get whatever this set of work is that you're working on to get that done and get people to agree with that and then go forward with that. Nice to have procedures, but they, at least for RSSAC, haven't been that useful and effective. Just a commentary from what I've seen.

JEFF OSBORN

Thanks, Russ. Robert, thanks for bringing that up. I'm just wondering who to pin a thumb on. Maybe it's going to be Andrew about who has the next action item to sort of synthesize a next thing to do and then—

ANDREW MCCONACHIE

Well, I have the next action just to write something for the work party chairs, so that they can send it to the RSSAC. And I think based on that communication; we need to bring this to the RSSAC meeting and have that discussion there. And then, yeah, from there, it will probably be a larger RSSAC Caucus discussion.

JEFF OSBORN

Okay, I think that makes sense.

ANDREW MCCONACHIE

Sure.

JEFF OSBORN

Good. Thank you very much. Anything else on that item before we move to the agenda next week in Canada? All right, Daniel? Do you want to pull it up? There we go. God, I don't even know if I've looked at this yet. That's next week in a whole other continent. Andrew?

ANDREW MCCONACHIE

Yeah. So, I wanted to add this to the agenda because we have 60 minutes next week, and we have everything on this agenda, on that agenda, and we also have 30 minutes of presentations on that agenda. So, we have 30 minutes less time, 30 minutes of presentations, and everything that we just did today as well. So, I don't think that's very realistic. So, it's kind of like a discussion of what do we want to cut from this agenda for the IETF meeting?

WARREN KUMARI

We did it here. Doesn't it go faster?

JEFF OSBORN

Well, if we cut the important parts, it'll be shorter.

ANDREW MCCONACHIE

Well, I figured we want to do the presentations early. Could you scroll up a little bit, Dan? Yeah, so we have these three great lightning talks. I mean, one option is just to leave everything else on the agenda for the IETF meeting, and then we get through what we get through after the lightning talks.

JEFF OSBORN

I can bully an agenda if needed. I mean, you guys are pretty good at this. I think giving that a try is the best thing, and then promising ourselves we won't go more than three or four minutes over.

ANDREW MCCONACHIE

I think, yeah, we don't have the luxury. I think the meet echo room shuts down or whatever. I don't know how the IETF works. I think they'll kick us out or something. I don't know.

JEFF OSBORN

Well, I'm game if you are rather than trying to fillet this thing.

ANDREW MCCONACHIE Okay, then we'll just put—I mean, that does mean that you may want to take a quick look. If there's something you want, you definitely want, move it up to the top. Otherwise, it's basically like a queue, and we'll work from the top on down.

JEFF OSBORN Daniel and I have had really good success with basically hard coding a time limit for every item, and then just knocking it that way. That's a thought.

DANIEL GLUCK I'll circulate this to the RSSAC Caucus list, and we'll also get thoughts from there as well.

JEFF OSBORN Okay.

ANDREW MCCONACHIE There's a hand from Robert Story.

JEFF OSBORN I'm sorry. Robert?

ROBERT STORY Yeah. No, I was just going to say something along the lines of what Andrew said about maybe moving some stuff to the top.

And the idea, the one that I had in mind was the discussion on what, from the survey, potential new work party or things to think about. Because we talked about one, and it went into the engineering session, and I don't think we really talked about the rest of the ideas that came from the survey. So, I think that should be moved up.

JEFF OSBORN

Fair enough. Daniel? Who's going to—we can talk about that. Okay. Hands up. Andrew, is that an old one? All right, we have four minutes. I think we can do this. We are at Q&A. Ken?

KENNETH RENARD

This was put in here. There used to be a time when these caucus meetings ran really short, and we didn't have enough to talk about. So, glad that there's engagement here. We've got three and a half minutes left, but this was a placeholder, especially for caucus members. We've got root server operators in the room. If there's anything that you want to ask questions of or vice versa, just kind of a free form, hey, I'm trying to catch up on this work party, or I've got a question. What do you RSOs do with X, Y, or Z? We usually don't get many responses here, but yeah, just an open forum to ask questions. Yazid?

JEFF OSBORN

Yazid?

YAZID AKANHO

Thank you. I'm just curious to know to which extent the RSSAC 002 data on the root servers.org is accurate. Asking because, well, I was trying to pull some data out of there, and I found some apparently inaccurate information. And it seems that it is a well-known case, but I'm not sure about that.

KENNETH RENARD

I don't know. Let's see, is RSSAC the good place to send that to, send the specifics to? Because if there's a specific problem, I'm sure we'd want to fix it. It should be pretty accurate. Quick plug for Andrew's website that graphically displays all that data. If anybody can throw that in the chat, that's good. That's data that all the RSOs publish, some basic statistics. We review that document every once in a while. If there's more metrics to be put into that and published, great. But yeah, let us know about any inaccuracies.

JEFF OSBORN

All right, is there anything else? Any other business? Yes, sir.

KUNLE OLORUNDARE

So, in the morning I attended your meeting, your working group meeting. Hello, can you hear me? Am I audible? Okay.

Okay. All right, so my name is Kunle Olorundare, caucus member. So, in the morning I attended your meeting, the one you had when you were discussing some of those other issues. I mean, I think they are more like issues that emanate from other communities, right? And probably maybe they were requesting for comments and things like that, right? So, I just want to know if as a caucus member, maybe I could join in such conversations. The meeting that you had in the morning, I was there. But I was seated at the back just observing.

JEFF OSBORN

GWG is actually a separate organization and—

WARREN KUMARI

No, it's closed.

JEFF OSBORN

Brad wisely walked out. The chair was down there. I mean, everybody's welcome. I think those are all public and open. It would be a little challenging. It's about three years into the process to try to catch up with all of it. But you're more than welcome to attend those meetings.

DUANE WESSELS

I'm not sure they're open.

JEFF OSBORN

Really?

DUANE WESSELS

Well, no. I thought open to invitation, not just open-open.

JEFF OSBORN

Who would know that? Andrew? Brad would know but Brad's not here.

ANDREW MCCONACHIE

They may be open here. I think the calls are maybe not as open.

JEFF OSBORN

Okay. Yeah, if you're interested though, I know here they are and—Liman?

LARS-JOHAN LIMAN

Yes, they're open to observers, but to participate in the meeting, you either have to be a member or to be invited by the chair. Yeah.

KENNETH RENARD

And there's also a very long list of documents that we could throw your way to get caught up.

JEFF OSBORN

There is a lot of history to it.

KUNLE OLORUNDARE

But adding that, all of that is open and transparent. All meeting minutes, all recordings, whatever for the last three plus, two years or something. So, it's a lot.

JEFF OSBORN

I am not saying don't do it because I want to keep anything secret. I'm saying don't do it because I sat through it all in real time. It is a tremendous amount of time and energy taken. And you just might find it more useful if you get involved with something at the beginning rather than the end, but you're obviously very welcome to catch up with all of that if you wanted to. It's a lot more governance related than technical. So, I think it's a valuable thing to do once, but I don't think it really—once it's done, it's done. We're not going to do it again, I hope, for decades or before mine.

WARREN KUMARI

I'll also note that if one's only an observer, it's potentially better not to participate because it's incredibly frustrating to see something which you have strong views and comments on

and can't make them because you don't have the ability to speak.

JEFF OSBORN

Someday Warren, you're going to have to let me know when you have a strong feeling about something because I was unaware of that having happened.

WARREN KUMARI

Yeah, I know that I kept quiet with a poker face throughout the entire session and was not going like, ah.

JEFF OSBORN

All right. Well, I apologize for running two minutes over. Thank you all very much. And for the RSSAC folks, I guess, we have a joint meeting with the board. And everybody is welcome if you want to come. That's always an interesting time talking to the board. Thanks, everyone. Take care.

DANIEL GLUCK

This session has now concluded.

[END OF TRANSCRIPTION]