ICANN81 | AGM – SSAC Open: Source Software Work Party Meeting
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KATHY SCHNITT: Thank you, Nick. Hello and welcome to the SSAC Open-Source Software Management Work Party meeting. My name is Kathy and I'm the Participation Manager for this session. Please note this session is being recorded and is governed by the ICANN Expected Standards of Behavior and the ICANN Community Anti-Harassment Policy. With that, I'm going to hand the floor over to John Emery.

JOHN EMERY: Thank you so much, Kathy, and thank you all for joining the Open-Source Software Work Party meeting. I'm going to go ahead and drop our charter in the chat. We just finalized our charter and today's going to be a big brainstorming session. Maarten's going to take us through a little bit of an overview of what this Work Party is going to be about. We welcome all input and feedback since we're in the very, very early stages. It's extremely helpful for the audience as well if you have any expertise in this to chime in, so don't feel like just because you're not in the Work Party that you can't join in the conversation. Please join in when you can. Maarten, are you ready to give the intro? Over to you.

MAARTEN AERTSEN: Good morning, everyone, and welcome to this Work Party. We will be doing technology today, so bear with us. We will be spending some

time in the Zoom whiteboard tool. If you want to participate in a bit, open up your laptop and use the Zoom client. But first, I'll give a little bit of a verbal summary of what's in the charter, what we're trying to accomplish, what this is about, what this is not about.

So, I'll take about maybe five to max ten minutes giving you that overview, and then I would invite you to join our Zoom call and help us brainstorm on some of the data we're trying to collect. So, that being said, Vittorio, please have a seat at the table if you like, because I think we would expect you to put in some data as well, and you might as well sit. And there's other spots at the table available.

So, the Open-Source Software used in DNS infrastructure Working Party. Our goal is to publish a paper that is readable for a policy maker audience, so it's maybe a bit of a departure for the SSAC, that lays out what the current landscape is of the use of Open-Source Software to provide service functions in DNS and in registration. And the motivation to do this is that we've noticed that discussions within industry, but also in regulatory circles in the past couple of years, have been around regulating the production of software and also the running of infrastructure. And when these such discussions happen, including when there is regulatory activity, it is sometimes easy to forget that in our space, there is this phenomenon which does not have a clear equivalent in the physical world.

So, if you consider pipelines relevant in a discussion or in a regulatory environment, you consider how pipelines are made, et cetera, and how they're deployed in a world. If you consider services and software, you

consider how those are made. But then it's easy to miss that in the software ecosystem, there is this phenomenon that doesn't really follow the normal economics of how goods are produced and passed on. And that is the phenomenon of Open-Source Software. And Open-Source Software has basically "one". It's everywhere in all physical goods with a digital component, probably as a dependency or something.

So, this is basically the background motivation for this work. Now, when I say it like this, the scope is basically unlimited. And we try to get work done and preferably on time. So, we have a fairly reduced scope as compared to this motivation. So, what we'll be trying to look at specifically is the daemon software that is used to provide these infrastructure and registration services. So, I'll show you on the whiteboard later what the specific building blocks are. But in terms of the paper, there's basically four areas we would like to cover. First is a description of the landscape.

So, what Open-Source Software is actually used? To what extent do the operators of infrastructure in the current world use Open-Source Software? Second, after this landscape description, is, what are the characteristics of this software they use? Characteristics in terms of what makes Open-Source different, perhaps, or not different from proprietary software. And also, what is the characteristics of the supply of this software as opposed to proprietary software?

Then we get into the security part. Because given the landscape and the characteristics, how do operators then evaluate the suitability of

this software for their use? And finally, what assumptions that are sometimes going around might be misplaced considering the landscape, the characteristics, and how you can evaluate this software. So, the end goal of the paper is to supply a policymaker audience with data on how the world works in this particular niche as to inform conversations, industry conversations, but also.

So, this is quite a lofty and maybe hard to reach goal. And that's why we want to solicit some of your help. Because if you want to write a paper and you don't want to be making it all up, you need some data. So, you need to inform all of these stages of the paper. And so today, we will be looking at three of those four areas, and most prominently the landscape, to figure out if we want to make a picture of how the world works today, who should we be asking for data? So, we can then make a super high-level abstract description of this world.

So, the goal is not to distribute the data we will be collecting. It's not even to present an academic analysis of the data. It is to inform the later writing of the high-level paper. So, I'll pause for questions about scope, because I think that will be helpful when we start to brainstorm. Are there any questions in the audience or maybe among fellow SSAC members about the charter, which I tried to summarize just now? Hearing none, do speak up if you do have them. I think my co-chair, Barry, will watch the queue to the extent there are questions. So, please raise your hand if you have any, and I will try and focus on the whiteboard technology.

So, I'll be bringing up this screen in a minute, and then we'll proceed to explain what we're going to do. So, I hope you can, in your Zoom client, join the whiteboard that is now displayed on screen. You can open it in your web browser. You can open it in the Zoom client. And while people are all trying and possibly sometimes struggling, let me know. I'll try and explain a little bit. So, I see some artists have commenced contributing.

So, what we'll try to do today is merely use the sticky note tool. And I've provided a background image to help make this a little bit less of an art and more of a usable data collection tool. So, I listed also some colors. So, at first, I would like to focus on landscape. So, we'll try to figure out if we want to draw a map of the world, basically, about Open-Source use at the service level, who do we need to ask to draw this landscape? And I'll go around the boxes right now.

So, in the charter, we split the landscape in a couple of areas. So, first, we talk about DNS infrastructure. And we decompose this into a couple of blue boxes. Namely, you have the Authoritatives. You have the, in this case, public resolvers. You have the root server system. And that's all on the right side. And note, we're leaving out some detail here. But that's kind of what you do, right, when you try to.

So, on the side of the registration infrastructure, we follow the areas that the ICANN contract covers, which is the EPP, the RDAP, or WHOIS, the escrow, and the DNSSEC bit. So, I see people are slowly exploring how this all works, which is nice. I would like to ask you to only place notes when you're actually filling them out. So, what we will focus on

first is to actually get some input on question one, which is, if we want to figure out, for each of these areas, who to involve or ask for data to answer the question at a high level, is or is Open-Source not used, and to what extent, to deliver this service?

So, if you have input on this, maybe you know a category of people, you know a group to reach them, et cetera, et cetera, please place a yellow sticky note, which corresponds to the first question, in the box of this particular category. So, I'll give an example. I had a chat with some people at Center and APTLD earlier, so I would guess if you want to reach ccTLD operators, you can actually talk to them directly, or you can maybe go to a group where they gather. So, that would be an example of an input to this brainstorm, where you could take a yellow sticky note and add to this board, like, if we want to know things about Authoritatives, this is how the data gathering could actually work. Does that make sense?

So, then I guess we need to play some exciting music and just get cracking. I invite everyone to join the whiteboard and have a go, and I'll try to summarize what I see every couple of minutes, and do speak up if you have a technical issue or otherwise need some assistance. I see some people in the chat mentioning they have access issues. Yeah, so the tool doesn't make it very simple to limit access, so right now, anyone in the Zoom call should be able to play sticky notes.

I'm seeing some notes being put in, but I'm also hearing from people that they have trouble. So, I think the tool says, 32 people can play around. So, I see some people also answering the second question,

which is excellent. So, the second question, which has the red sticky notes, relates to the fact that we will not be able to gather complete data on this. We will never be able to ask everyone, and we are also trying to timebox this to do the data gathering exercise and maybe survey some people, interview or ask them questions, from now until about early April. And therefore, we will need to make trade-offs.

And in each of these service areas, if you have ideas of how to constrain the amount of research we need to do or actions we need to do but still arrive at reasonable conclusions at a super high abstraction level, those would be welcome as well.

So, I'm seeing all the fun things happening that you expect to have with this kind of tool. You have a collaborative movement of stuff and drawing over each other. I think we're doing well. Keep it up, people. So, I see quite a bit of activity in the Public Resolver's area, and I'll proceed to summarize some of this. Let's see, do we have my screen on? Yeah, we have. Excellent. So, what I'm reading here is for the Public Resolvers, we should be talking to DNS4EU, which I guess is one of the operators of a Public Resolver.

JOHN EMERY: Not yet, by the way.

MAARTEN AERTSEN: Sorry?

JOHN EMERY: Not yet, by the way.

MAARTEN AERTSEN: Not yet. Oh, thanks for that. We see a suggestion to talk to public DNS resolvers with data projects like Cloud for Radar, ISP associations for end-user internet access resolvers. So, yeah, I guess that one directly gets you into the scoping thing. So, I'm not sure who'd put that in, but if you have ideas of where to stop, that would be excellent for an addition with a red sticky note next to it. Someone suggests biggest global public resolver operators. There are not that many. Yeah, cool.

One is being typed, so I'll not touch that one right now. Let me zoom out for question one and go to RDAP/WHOIS. So, what's being suggested is the region-able TLD operator groups. I think I mentioned two. So, the background image is locked, so it doesn't move. So, if you unlock it, it will move again. So, don't do that. Let's see. So, I'm also curious to hear maybe on the mic from people. Yeah, so don't unlock the thing, please.

So, I'm also curious, no one is using the escrow field, and I know that's kind of a fuzzy subject in certain ways. If people would be willing to speak up at the mic, if we should include this in scope at all, that would be useful.

JOHN LEVINE: Maarten?

MAARTEN AERTSEN: Yeah?

JOHN LEVINE: I think it's fine to include it in scope. My impression is there's one or two packages that everybody uses, and it's quite possible that none of the people who wrote them are here.

MAARTEN AERTSEN: Yeah, so it's okay if we don't identify them right now, but having a pointer towards where we can find or how we can find those people, that would be nice. And the more specific, the better, because those of us who will be following up on whatever we collect today could really use your help being specific. So, if there's someone in the audience today or someone online who has more hands-on experience with the operations of an escrow service, that would be super helpful to give some pointers.

So, I also, and I didn't explain this yet, there's also a third color in the picture, which is basically answering the question directly. So, there is the green sticky note thing, and if you have ideas of what your perspective is on this question, please put them in as well. Like if you from experience operating one of these infrastructures, know that a certain trend is there, that is useful to collect here as well. It's not what we will be using directly, but if you have ideas about that, please put them in.

JOHN LEVINE: Sorry, Maarten. So, you mean if people operating the infrastructure know the Open-Source Software they use to put those in there, is that what you mean?

MAARTEN AERTSEN: Yes. Essentially, but we're not interested in creating a market survey. Like we don't need to know if it's like, for example, on the Authoritatives side, if it's not, or bind, or that's not the relevant thing. It's just a single bit. Like are you using Open-Source to realize this function? Yes or no. And then I think we can dig in a little if we want to, like why do you do that, et cetera, et cetera. But it is essentially like a market study, if you will. So, I'll zoom in on a couple of blocks and see what's getting added.

BARRY LEIBA: Ondrej put a long thing in the chat of some Open-Source Software and make sure we record that.

JOHN EMERY: I'm putting it in the notes.

MAARTEN AERTSEN: Thank you, Ondrej. So, on the Authoritatives side, people are mentioning talking to vendors, which is very nice because I think a number of them are represented here today. So, I think that angle is definitely a possibility. I think at the table we have Vittorio working for the parent company of PowerDNS. We have people from CZNIC. We have in the Work Party, but not with us today, someone from ISC,

authors of BIND, and Jaap and I work at the NLnet Labs who make another implementation. So, I think that's definitely one angle to look at use of Authoritatives. Unfortunately, as it is always with Open-Source, there's also users that we don't know about and don't have any contact with. Merike?

MERIKE KAEO: Yeah, I think I had mentioned in a previous Work Party meeting that DNS Org is a really good place to get a lot of the DNS operators and the vendors and to get some information in terms of what Open-Source they are using, utilizing, and maybe writing, maybe their own specific libraries for.

MAARTEN AERTSEN: Yeah, excellent. Would you mind adding that to the board? Can you put a sticky note?

MERIKE KAEO: I'll try. I had some weird access issues because I don't log into Zoom.

MAARTEN AERTSEN: I'm kind of looking to John to see if you can add DNS Org to Authoritatives. It's not that I can't myself, but I'm doing the talking.

JOHN EMERY: I've got it.

MAARTEN AERTSEN: And I would love to do others or others to do talking, by the way. So, the other thing is cloud operators analyzing their product offerings. So, I think we have some members in SSAC who work for the larger operators on the cloud side. I hope they're there. I don't see as many. Yeah, I see some. I hope they are willing to somehow give an indication, even if it's only a single bit, whether they are using a proprietary or an Open-Source implementation. There's also the suggestion to have look at the different type of operators. If you have specific suggestions of how to reach these people, who to talk to, et cetera, the more specific, the better, because that'll make our life easier.

So, let's move on. So, I'm noticing for Authoritatives, there's no one who's put a scope thing in. So, I'm zooming out. We need to figure out where do we stop asking people? When is it enough? So, if you have ideas about when to stop asking for the Authoritatives, please put in a red one. So, when do we have enough data to be able to write this high-level policy paper without, I'm not sure what the expression is in English, lying through our teeth? Oh, okay.

Yeah. And that would be the goal here. To kind of figure out where do we stop? When is it good enough? And we're not in academia, but we still like to have evidence-based.

So, I think we only have a single red paper, and I think this is a more critical audience than that. So, how about we get more-red post-its on the board, figuring out what would you be looking at if you had a couple of months to do sampling essentially? Thanks. I see some more reds

popping up. Excellent. So, let's zoom in on the zone data management bubble. And if it's okay, John Levine, I would like to invite you to talk a little bit about what you think about when you have this heading.

I think we had a discussion in a working group and you came up with this term. Maybe we can flesh it out a little bit with the audience in terms of who to ask, what do we know already in green, and what is reasonable scoping if we want to include this?

JOHN LEVINE: Yeah. What I was hoping to include here is what I usually refer to as web crudware, which is that back in the heroic era, people manually edited zone files with text editors, but hardly anybody does that anymore. Now there is some sort of web front end that sits between the user and the zone file. And the web front ends tend to be pretty bad. And I honestly don't mean bad enough that I wrote a little Open-Source one myself.

So, I presume if we look around, there are management packages, but at this point I would have to look to find out where to find it. But I think it's important for people to understand them because they have caused weird effects in the DNS. It's like a DNS text record is a sequence of strings, each of which is up to 255 characters, and some of the crudware could only handle a single string, which it broke DKIM and it broke other stuff. Or some of them don't understand that domain names can have underscores.

And so, I think just understanding that kind of limitation and where it still applies, I think could be, and a lot of them have a fixed list of record types they understand. It's when there's a new record type, too bad, you can't use it. So, I would like to understand issues like that that prevent people from actually using the DNS the that they want to.

Unfortunately, like you say, where does the software come from? At this point, I haven't a clue. And I worry also that a lot of providers simply do. My guess is each of the large registrars rolled their own. Just what we can ask them.

VITTORIO BERTOLA: I'm trying to understand. So, you actually mean that the software, I mean, let's say I buy a domain, typically buy a great hostel like the VH, IONOS, GoDaddy, one of these people, and they have some web interface to enter my records. So, is that what you're referring to? Because I understood this to be more like the backend that, for example, big operators of companies that have tons of domains used to compile the zone automatically, or like I mentioned the DNS will be effort, because there are people that use DNS for like load balancing and round robin stuff. And so, they have automated stuff. So, I think that it's both things. But yeah, I guess you were mostly concerned about the web interface.

JOHN LEVINE: So, I think, go register a domain, any registrar, and they will drop you into some sort of web page that gives you some ability to put in some DNS records, but often not all the records you want.

VITTORIO BERTOLA: Yeah. And I mean, in general, I guess that's sort of custom bespoke stuff that each of the big people have to do. But maybe there's products, I don't know. So, yeah, it's good to me. It's sort of easy, I guess. We just go to the biggest, I mean, registrars, let's say.

JOHN LEVINE: Yeah. No, I think we're agreeing that it's probably bespoke, but if there is Open-Source that might be fixable, that would be nice.

MAARTEN AERTSEN: So, I'd like to zoom in on the EPP side of the screen, and I'll do so. I hope I don't make you feel like you're in a ride. So, does anyone with a better view on the registry side or the software on that end want to comment on what's here and what we should be looking at specifically? I know there is at least, there's Jaromir at the table, who I think your organization makes FRED. Are there others who are willing to maybe comment on what you were looking at? How do we map out registry software in the world and find out if it's like dominantly Open-Source or maybe not dominantly Open-Source at all or any comments or maybe Ram?

RAM MOHAN: Yeah, I'm not sure what I mean. So, if you look at, say, our own operation, we do use Open-Source in it, but I wouldn't call the registry software Open-Source. So, it's a question of which subset you want to use. So, we use Postgres as an example. That's Open-Source. So, I think as a registry operator, asking specifically what components of your registry software uses Open-Source might be relevant without digging into what are the libraries that are Open-Source.

MAARTEN AERTSEN: Thoughts from others? I guess this really relates to scope. Like how do you look at this particular? I see, yeah.

MERIKE KAEO: I think it would be interesting to try and ascertain in registrar and registry environments what are some of the commonalities in terms of Open-Source that they utilize, because it comes down to if there's a vulnerability that impacts all of them. If, let's say, 80% or 90% of the registries or registrars use some common open software tools, then if there's a vulnerability, how do you then manage and fix that? And it could be very impactful depending on what it is.

MAARTEN AERTSEN: I think Jaromir was first.

JAROMIR TALIR: Yeah, I just wanted to comment that, as you mentioned, like there is not many registries that are developing an open sourcing full registry

solution. I'm aware about like two or three. So, definitely if there are some others, it's a possibility to go through these regional registries' organizations or IETF Registry Working Group or this way.

MAARTEN AERTSEN: So, which ones would that be? Because I'll add it to the board and help us.

JAROMIR TALIR: Well, I know that Estonia, that they have to Open-Source their registry platform. I'm aware about Nomulus, the Google registry solution, which is not ccTLD, but they open sourced this some time ago. I don't know if it's still in availability. And our FRED, of course. And this was those three that I'm aware of.

MAARTEN AERTSEN: Anyone else? I think there is also CoCCA, which is not Open-Source, but they have this source available style. So, we should probably have a chat with them and figure out. Sorry? Excellent.

RUSS MUNDY: They are actually around here. So, talk to Kurt.

MAARTEN AERTSEN: Thank you. Let's move on to the next one, which is RDAP/WHOIS? So, far on the board is mostly ways to reach out. Maybe we can flesh it out

a little bit. At what point do we feel you have looked at enough of the landscape to answer this question? Does anyone have opinions about this? Is there some way to reason, for example, down the tree or like where do you stop looking at this? John?

JOHN LEVINE: I don't understand what the question is. Are we asking about RDAP servers or RDAP clients or things to like follow RDAP bootstrap or something else? There's an obvious split between the servers and the clients, but since it all kind of chains to each other, there's a lot of overlap.

MAARTEN AERTSEN: So, to answer this question, I would go back to the goal of the paper. So, in the end, we want to have like a high-level description saying, to what extent the infrastructure to realize DNS and registration in the real world depends on Open-Source Software. And in order to write about that, we will need to figure out what to include in data collection. So, I'm soliciting opinions about what is then the scope for RDAP and WHOIS to be able to write that high-level text. So, maybe it is clients, maybe it is servers. If you have thoughts, put it in an orangish note, because we should set those boundaries. We need to scope this. And I'm trying to do that collaboratively.

So, are there any people in the room who would really like to collaborate but have issues with the tool? Please raise your hand in that case. So, either there is a low willingness to collaborate or the

technology is flawless and I'm banking on the second. So, there's also some sticky notes in the corner which are not in any of the boxes. Would anyone want to speak up about why you positioned them there and maybe give a little bit of context? Yeah, that's Christian. Come to the mic.

CRISTIAN HESSELMAN: Yeah, so I put up the green one. I can't even read it myself anymore. But it's a suggestion, because I've seen a previous work where people did an automated analysis of mailing lists. And perhaps this is a possibility for this Work Party as well to ask someone to do that analysis and look for people who ask questions about open-source software or contribute to open-source software, these kinds of things. It's a bit more researchy, I realize that. But it might give, let's say, information on all of these areas.

MAARTEN AERTSEN: I like the suggestion. Thanks. Is the yellow one also used? It mentions Forge searches, basically, GitHub, etcetera.

BARRY LEIBA: And Rod has his hand up.

ROD RASMUSSEN: Exactly, yeah, that's mine. Yeah, there's lots of packages for these various things. I didn't want to put it in every single one of them. So, just go do a relevant search for, I don't know, WHOIS Client or RDAP,

blah, blah, blah, or whatever. Just keyword search and look through the major repositories and you can also take a look at the popularity by downloads, etcetera.

MAARTEN AERTSEN: Would you consider that a good proxy for real-world use by operators? It's an honest question.

ROD RASMUSSEN: Depends what's the context? Are you looking at a client for what or are you looking at a package that supplies some sort of functionality that feeds into other things? And there's a bunch of potentially relevant tools that you could surmise are being used for doing things tied to the overall goals you've got in the other boxes. But it's again, if I was going to do this, I'd say, okay, well, let's think about the various packages or things and what they might be called or what they might do.

And you might actually base that on surveys from other things and then go back to the repositories and say, okay, what else has got this in the notes or in the names of the packages and go through it. But it's probably a pretty quick research project.

MAARTEN AERTSEN: Thank you. So, I'm really happy with the amount of input we're getting. Maybe we will pause for a second and ask people to provide maybe a critique of the method or input to the approach more generally. Compliments are welcome too, but yeah.

NABIL BENAMAR: This is Nabil for the record. That's a comment, a side comment, if you permit. So, I can see that from the appellation of the name of the Work Party that we have saved, that we have established is the Open-Source. But when we go to the web, to Wikipedia, for example, to list the top DNS software, for example, all of them are mentioned as free software and not Open-Source. So, should we do, for example, Open-Source/free software? It seems that free in terms of the software terminology is more inclusive than Open-Source. There are some Open-Source that might not be totally free. Thank you.

MAARTEN AERTSEN: Vittorio, would you like to--?

VITTORIO BERTOLA: I mean, this is a 30-year-old discussion, but I think, if the easiest way is just to use like acronyms like Flores Free, Libre, and Open-Source Software, because there will be people who are rightfully noting that free and open might be perceived differently, even if the future position is that free software and Open-Source Software are the same thing. But yeah, we can just adjust the terms.

MAARTEN AERTSEN: I think we'll make a note to make sure that the final publication makes sure to include both terms. But it's a good comment. I took some shortcuts. We will be taking more shortcuts, and I think we should make

sure that these are all nicely explained in the paper. But sure, we mean the whole category, both free and Open-Source. Any other maybe general comments, critiques? Hearing none.

So, then we will exit this whiteboard and move on to a topic that will require a little bit less time, but will gather your input anyway. So, bear with me while I try to close this thing, and I'll ask the people running the technology to give me an export if that's a possibility. But that's for later.

So, welcome to this next whiteboard. This will be a quick one because we have about 20 minutes left, which I guess is a nice fit for this bit. So, another corner of this paper will treat assumptions, and I'm guessing many of you will have heard or have assumptions about the use of Open-Source Software in the infrastructure or registration infrastructure. And I would like you to invite to place sticky notes with some of those assumptions, because I think if there are assumptions that do not match reality, we should try and, in the paper, inform those that hold them as to whether these assumptions hold.

So, I made some boxes in the corners. One is developers, so assumptions about developers. To give a personal contribution to this box, I would have this assumption that Open-Source is always made by people in the attic, which I think holds to a very large degree, but maybe not always. So, I made a box with respect to the relations between developers and users. This is about the existence of contracts, blah, blah, blah. There's a box for maybe security properties that are either

inherent or not inherent, and there is the place all your other suggestions here box in the lower right corner.

So, if you have heard assumptions, if you have assumptions that you think we should be covering in this paper, please feel free to help make some art here. And I really appreciate the number of people putting stuff on the board. Thank you. So, I'll read some of the things you're putting in. So, for example, in the security properties box, we have some assumptions listed as, for example, inherently less secure, no need to invest, more secure because anyone can audit, lower quality, quickly patched when vulnerabilities are identified. Yeah, great. Thanks for contributing.

In the other things corner, we have Open-Source Software will not become closed source software in the future. Commercial or non-commercial Open-Source Software is inherently more free or more secure than the other category. That seems to be slightly overlapping with the other one. And then finally, Open-Source Software has no AMC and no regular upgrade cycle. I'm not super familiar with the AMC term. So, whoever wrote that down. Okay, yeah. Can you expand that then? Yeah, cool.

So, in the developers' corner, we have, developers have the freedom to choose if they want to use Open-Source Software or not. We have that Open-Source projects are well funded, but in reality, they often depend on a small number of keys, I think it says, contributors. And we have developers are interested in security and want to be able to control that themselves.

And then finally, in the relations between developers and users, we have, most users choose Open-Source for principles. Users have deep knowledge of the caveats of the software they deploy. Yeah, that's someone I recognize. Very good. So, unless there are people still typing, I think we'll close this part. I see people still typing. So, I'll give it a minute. If things spark in your mind after this meeting, just send me an email. I'm collecting all of this and then late contributions are welcome too, because they're not late. We have just started.

So, the final topic that we will not be doing a whiteboard on, but I just wanted to bring it to your attention is, we're also interested in this paper to have a look at evaluation. So, some people came forward and mentioned that they have had repeated conversations as an operator with regulators in the past. And a question that came up a lot was, why are you using this software? And they felt like they had a burden of proof that was maybe different from if they had proprietary software only.

So, one of the things that we could be doing in this paper is having a look at what processes they employ and how this conversation works to maybe share some effort in this space for operators that want to go this route and make visible how the characteristics of this software factor into responsible evaluation. Not sure if anyone wants to add to this. Ram?

RAM MOHAN: Not sure I understood where you're going with that. What is the end result of that work? I didn't understand what you wanted us to do.

MAARTEN AERTSEN: So, if you have examples from your organization where the process you use to evaluate the software or you've had conversations in the past where you had to argue that this software is used and it's responsibly used, if there's aspects of those conversations that should be available wider to the community, I think it would be good to write about them. So, please share if you can. Does that make sense?

ROBERT GUERRA: I remember this may have been the last time we met, is in response to government officials, so why are you using this? And so, one of the discussions we had is, does it meet certain standard or certification? So, there maybe that's often with other types of software. So, it's just that how is Open-Source Software either the same as proprietary, meets the same standards, security review, things like that. And then it's just like, okay, why?

For someone who doesn't know, it's just like, why is this better? And so, trying to answer just like, oh, it meets the same security criteria, the same certification process that we usually do for other things and explaining that to the officials. So, it's the same, except it's a little bit different. So, if you remember that conversation we had in Washington.

MAARTEN AERTSEN: Thanks, Robert. Ram?

RAM MOHAN: Yeah. I'm struggling with that question, Maarten, because there is not a common basis here. It differs based on who the evaluator is and whether it's done by a government agency or whether it's done by some third party, private consultant, et cetera, number one. And number two, there is no baseline. So, I think, I feel like it's very hard to answer the question you're asking because it seems to assume that (A), there is a baseline, and then (B), there's some level of harmony in how these questions are asked, at least in my experience.

Each one is its own case. And speaking to a national security advisor and the questions that are asked by a national security advisor is very different than speaking to Deloitte, who is evaluating a tender offer. So, that's why I'm struggling with how to actually constructively engage with that question.

MAARTEN AERTSEN: Yeah, so maybe we should revisit this and see what would be a productive way to look at this angle in the paper. And I don't have the answer today, but I appreciate the comment, because I don't think any of this is very simple. And yeah, we should definitely work on this. I saw another hand on this topic just now. Maybe not. Okay.

ROBERT GUERRA: Just maybe a quick follow-up.

MAARTEN AERTSEN: So, yeah. And then I think we go to Barry to close off the session.

ROBERT GUERRA: So, it might be, instead of one generic question, it might be, what are the questions coming from the different groups? So, what are the type of questions coming from Deloitte or national security? How are the different solutions compared? And how is Open-Source kind of positioned itself? That might be breaking up the question to see where the questions are coming from. Sure.

RAM MOHAN: Robert, I think it might be more useful to classify categories of questions rather than the questions themselves.

MAARTEN AERTSEN: Thanks.

BARRY LEIBA: So, we do have till noon, so we have another half hour. If we're done, we're done.

MAARTEN AERTSEN: Yeah, that's true. That's true. Well, we did go speedily. So, let's see. Oh, I'm actually super happy with progress. Maybe let's ask the room. Are there whiteboards or topics you would like to spend some more time on or dig into a little bit more? Because we went through this faster than I had imagined, but we did collect quite a bit. So, great success. Give yourself a pat on the-- Ram?

RAM MOHAN: I think it would be useful if there is any information in the room about what, say, the EU or other, why are they studying this topic? Are they trying to solve for assumptions? Why do they want to do regulation? So, I think that would be useful to understand.

MAARTEN AERTSEN: I think we have multiple people in the room who have a perspective on this trend. I can say something, but I maybe can also invite some of our other EU-based organizations to say something. I see Ondrej.

ONDREJ FILIP: Yeah, just to comment. The EU wants to secure its environment, so that's the primary motivation with the Cyber Regulation Act. But meanwhile, there was a lot of comments that very complicated risk assessment on every piece of the software might be complicated for Open-Source developers, as most of the companies are operated on very low costs. And unlike the commercial vendors, they cannot provide such guarantees like them.

So, that's why I think the question of Open-Source came up in the light of the regulation that EU wants to understand how it can help this environment, because they understand that it's crucial for most of the part of the Internet and even the European infrastructure itself, because most of the software these days, even commercial one, is based on Open-Source. And requiring every Open-Source developer to go through the certification process is unrealistic. So, there's a huge

debate now, and it ends with the current regulation. So, that's why Europe is so kind of interested in the subject these days.

BARRY LEIBA: Yeah, I had a conversation with Maarten last night while we were waiting for the seasons, and there's the assumption by some that Open-Source is because anybody can propose updates to it, that it's inherently less secure or less safe, and the other side of it being that it gets more scrutiny from the community and bad updates tend to get noticed. So, there's a balance there. Matthias?

MATTHIAS HUDOBNIK: Thanks. So, maybe it would also make sense to ask some people from DNS4EU, because there's a project where they say it's supported by the European Union Agency for Cybersecurity, and they want to secure infrastructure projects. So, it might make sense to reach out to them and say, look, maybe there is some common ground or some kind of knowledge.

MAARTEN AERTSEN: I think someone put it on the other board with respect to the public resolvers. So, I think, yeah, it's a good suggestion. It was on the other board. Merike?

MERIKE KAEO: Yeah, there was also an inaugural, sorry, the first one inaugural, a vulnerability conference that's sponsored by the first community of

incident responders, and they had a lot of sessions regarding software bill of materials, SBOM, and Open-Source, and keeping track of that. So, it might also be very interesting to work with that community, the first community, and especially the folks working on vulnerability and tracking Open Software to see what is actually relevant to DNS.

MAARTEN AERTSEN: So, if I understand correctly, you think there's value in working with that community as a way to, again, collect metrics about what software is being used? Because what I want to avoid is broadening the scope of the paper to include a vulnerability discussion, which is also extremely interesting, but it's not super into scope. Is that what you were suggesting?

MERIKE KAEO: No, I was not at all suggesting adding vulnerability and having scope creep. Yeah, it was more to work with that community to see what information they have in their work to identify software bill of material to see whether or not anything that's relevant to DNS so that we know that if we have gaps in everything we're covering in terms of what DNS Open-Source Software exists, that we then get that information from that community.

MAARTEN AERTSEN: Thanks. Ram?

RAM MOHAN: I think there is value in doing the corollary to this whiteboard, which is common but well-placed assumptions.

MAARTEN AERTSEN: So, we will do a game of imagination, and it states in the middle Common but Well-Placed Assumptions. And I don't have a background image with the cute boxes, but maybe if you have some common but well-placed assumptions, please stick them here. Oh, someone is making this happen as I speak. Great.

So, I'm seeing some things pop up. Maintenance quality, reliability, even of heavily used Open-Source projects is sometimes unpredictable. Free and Open-Source Software is often run or managed by not-for-profit institutions. There's two of them that are somewhat related. Resolution of zero-day vulnerabilities is usually fast and peer-reviewed. Speed of development exceeds speed of deployment, in particular with respect to security patches. And Open-Source enables tracking down bugs directly without depending on commercial support tickets inbound.

I see Open-Source increases the autonomy of the people who use it. Deprecation of old version is poor. I guess that's deprecation of old versions in operation, it's resulting in significant security holes. Open-Source projects have a good support from the community and a kind of good and transparent, let's see, way to share the issue in fixing them. Open-Source facilitates audibility of changes.

Open Source increases the autonomy of the people who use it, avoids vendor lock-in. Oh, this one really gets you going, yeah. There's one with a font that is a bit hard to read. Let me try. Open-Source facilitates experiments. I think we see that in IETF where there's prototypes for running code, is rarely certified or part of any capability maturity measurements. And let's see, I'll stop reading them for a minute, but have fun adding.

Open-Source often has no reproducible builds or unclear whether binary packages contain published code. Not sure about the often, because I think this might be true for software in general. Let's see. Open-Source is an enabling factor for new startups and products. Open-Source almost does not include backdoors. Like I suppose there's also the inspectability angle to this. Let's see. Open-Source options hardly make it to any magic quadrant reviews. Crucial for credibility and trust. Yeah, I guess that comes with how these magic quadrants are made.

You know what? That would actually be an interesting way to visualize some of this data with respect to the landscape, because I think it's a form that is more commonly understood. But then, yeah. Let's see. Open-Source emphasis on contributions. Open-Source has less security theater. Good contribution. Let's see. Thanks, Peter, for assisting identifying the new ones.

Open-Source is important for developing, testing, adopting new internet standards. The more people participating in the use of Open-Source Software, the more barriers to entry can be effectively lowered.

Yeah. Open-Source facilitates interoperability by creating prior art in the face of intellectual property. Open-Source adoption in commercial organization is often by default rather than by choice. Yeah, this is also very, yeah.

So, thanks again for all the input. I'll leave this board open for a bit. So, if people are still typing, feel free to. I will look at the input after the session. And I will now hand over to Barry, who will speak to the timeline.

BARRY LEIBA: So, in the charter, which was posted a while ago to the chat, there's, in section four of the charter, there's a timeline. So, let's take a look at that for a minute. That we're looking to do our data collection between now and February and looking to finish the data collection by the end of February and start.

We're not going to start writing after the data collection. We're going to overlap those two. So, we'll get some words on paper between now and February as we're collecting data and continue that. And we're looking to get a first draft of the report by, say, end of March, beginning of April. We have a date of 4 April on that for the timeline. So, that's where we're looking. Is this a reason? First question, I guess, is this a reasonable timeline? Does somebody think that we're being overly aggressive or too sluggish? Ram?

RAM MOHAN: I think it's a good cadence.

BARRY LEIBA: We'll take that as a representative of the group. So, what do we do? Maarten, do we need to talk any more about the timeline at this point? Well, so yeah, the goal is to publish the document by Prague, by the Prague meeting, ideally before the Prague meeting. So, that's where we are. If we get a first draft beginning of April, that gives us two months to finish it up and get SSAC consensus on it. Ram?

RAM MOHAN: Thanks. In addition to the plan to publish at the Prague meeting, I would suggest that the Work Party chairs spend time on, given that it's EU adjacent and all of that, whether you disseminate it, also right around that time at the ICANN meeting, who do you invite? Do we present this to the GAC? All of those components, because some prior planning is needed to get in front of some of those groups who might be useful. Because generally, that's not how we operate. Generally, we finish the report, get it out, and then we start thinking about who do we send it to. But if you want to get in front of the GAC, for example, for Prague, we may actually not, it may be too late.

BARRY LEIBA: Yeah, that's true. So, I guess one thing that we could consider is when we do the draft in April, that have that go to the full SSAC for a sanity review. And that way we can feel more comfortable starting the process of getting together with the ALAC and GAC and whatever, any legislators or regulators that we can talk to in Prague.

MAARTEN AERTSEN: Yeah, I like the suggestion. I think we are not directly targeting the GAC with this publication. So, it's intended for, it needs to be suitable for consumption by policymakers. And I think we should definitely test it with people in the GAC. And we could also, I think, present our work within the ICANN community, including the GAC. But I think if it's one event later, we'll be fine.

BARRY LEIBA: Well, true. On the other hand, we're likely to talk to the GAC about this in Seattle, when we had our joint session with the GAC on Monday, they were very interested in this particular work, or at least some of them were. And so, I said then that we should have significant progress by Seattle and at least something to talk to them about.

MAARTEN AERTSEN: Excellent. I was otherwise occupied that session and I'm happy to hear it.

RAM MOHAN: Yeah. So, I actually think that the GAC and the policymakers are your primary audience for this paper. I don't know what you would want ALAC to do as an audience is concerned. But I also point out that at these meetings, the GAC people are pretty busy. So, you can get in front of them, but it's not sure it's going to register. So, I'm just saying, if you

want, if one of the primary audiences is, policymakers, then we need to think about how to reach them.

BARRY LEIBA: Do it in advance, maybe during prep week or something.

MAARTEN AERTSEN: Quick response and then we go to Robert. So, the reason I'm saying this is because I think our work paper will be evidence-based and give a lay of the land. And I think it will be a useful tool for others, which may be the same people, but not SSAC to take that as an ingredient and have specific recommendations that they see in their environment on specific policy issues that are making the rounds. And I don't think we will be doing that.

And that's why I'm saying, it would be useful for the GAC to discover that this work exists as input to there. But there's also this secondary route where someone else may be in a future EU policy discussion, takes this document under their arm and has a discussion based on their particular perspective. And I don't think we can do like a very opinionated policy piece. That's not what we're chartered for. And that's why I'm suggesting this interaction, but you know better. And let me know if we can.

BARRY LEIBA: Robert, Merike, and then Ram.

ROBERT GUERRA: I think we can spend a lot of time kind of about that. I think my particular comment is that I agree with you. The GAC is a key group that we should be targeted towards. And so, it's something we would need to think about and something that we've discussed is, how we frame the summary for that audience. And number two, what I would say is in addition to the writing and as part of the summary, visuals that help, what are the bullet points? And then also kind of as a background is additionally is kind of how we got to the point of like all the stuff, how we're reaching out, like all the data, the work that we've done and what we've pulled in, I think could be helpful.

And to your point is just that, yes, we want to target the GAC at Prague doing something before Prague, whether it's their prep. So, they have some of the materials before. So, it's not just, this is it. And they think about it just that. So, it's either with them or there are other people they can ask us very specific questions afterwards. So, it's the prep period for Prague that we should be thinking about if that's the meeting that we're thinking about.

MAARTEN AERTSEN: If we want to make the prep period, then we can't target Prague because the timeline is pretty aggressive to actually make Prague in terms of SSAC Internal Review. So, if we need to be weeks ahead of that meeting, then we're not making it, like based on the current schedule in the charter. Yeah, but we can have a discussion. Merike?

MERIKE KEAO: Yeah, I'll just note that one of the GAC members that was extremely vocal about this was from the EU. And I think because they're kind of in the forefront of some of this regulationary aspect. But I agree with you what you were just saying. And I was going to kind of mention the same thing. But we also have the opportunity now. I mean, many of the GAC members, I think we've individually had conversations after the meeting, and they really liked the interaction. They also mentioned that during the meeting. And I think that some of the informal discussions that maybe we can have would also help overall. But yeah, I'm for making sure that we don't overpromise what we can deliver.

RAM MOHAN: Yeah, Maarten, I want to distinguish between the audience for what we write versus writing for an audience. So, just to be clear about it, we're going to write what we write. It's going to be database. And so, we're not writing this for policymakers. But after we write it, we ought to be clear, who are the people who are likely to find the most utility or the most value from what we have written?

Once you have that identified, then we need to do the work to prep them, to have them aware that this work is being done and provide material in a way that is accessible for them and that is usable by them. That is what I'm saying we should be doing. I'm not saying we should be writing a paper for policymakers. I'm saying our paper is likely to be most used by policymakers.

BARRY LEIBA: Yeah, I'm not sure that I completely agree with that because we need to think about our audience as we write the paper and things that we might not think about including need to be included.

RAM MOHAN: Yeah, just briefly. Yeah, there's an echo here. Someone has audio on. Yeah. Okay, so I agree with you. I think that informs what we write, but I still don't think that we write for the policymakers. We write because we want to provide a baseline of where things are. And that's what we believe is important to be done.

STEVE SHENG: So, a comment on the timeline and the method. I think the timelines is aggressive given how the SSAC work. So, I think if the SSAC wants to deliver in that timeline, that's significant effort needs to put into it. So, that's one. The second thing about contacting people, that itself is a very lengthy process. Just give a data point. We did that for the DS Automation where we have to develop a survey of registry registrars on their DS Automation Process. It takes very long, so many emails, so many reminders we have to send. And in the end, that data is not very useful.

So, as you're developing this, also think about some of the things that the Work Party itself can do. Maybe use the external to validate what you find rather than go out with a clean sheet because finding people and getting that, the right amount of input takes a lot of time. Thanks.

MAARTEN AERTSEN: I appreciate the comment, Steve. I think we are setting pretty ambitious goals. And I think in the next working party meeting, we should definitely discuss who is willing to carry some of that load and be realistic about what we will be achieving. But this is the current goal as written in the charter, which we had consensus on in the working group who were in the Work Party. And I think we should definitely take your wisdom on board considering you've supported SSAC for many, many years.

BARRY LEIBA: Yeah, I think the problem is that if we set a goal of September, then we're going to publish in November. If we set a goal of June, we have some chance of publishing in the summer.

MAARTEN AERTSEN: There is a comment from the audience.

DIEGO: My name is Diego, just a photo really. Is the information gathering? Because it is very interesting information that we've gathered together. And I'm from the dotCAM registry. I just want to mention it. It's the fact that, like a lot about DNSSEC and EPP was interesting to me. I don't know if this is going to be available, like where this is going to be available to see.

MAARTEN AERTSEN: So, in the current charter, we are not planning to publish data as a deliverable. We plan to deliver the paper and the data serves to have the confidence that what we write is an accurate representation. I guess if there are working Work Party members that are also interested in publishing data or doing like follow-up papers and that may happen. And I guess you voicing your interest is helpful in that regard, Barry.

BARRY LEIBA: And that can inform, we could put an appendix to the paper that has some of the data or whatever. We'll just have to see what falls out and what can be made public.

MAARTEN AERTSEN: Thanks for speaking up. I appreciate it. So, I guess we'll do a quick round to see if there's any last questions from the Work Party or perhaps the audience. We'll start with Jody. Jaap, Merike, Yeah, I'm here. Then I'll go to Peter. No questions. Great. So, thanks for being here today. You got to see a bit of how the sausage is made at the beginning of a Work Party where it's all a little bit figuring out how things fit together. And there will be another open Work Party meeting likely at the next ICANN event. Until then they will be on our regular calls and not accessible to the public, but yeah, be sure if you're interested to follow up then.

JOHN EMERY: Thank you all for putting stickies on the idea boards. It was very helpful. Please stop the recording.

[END OF TRANSCRIPTION]