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MARRAKECH – RSSAC Work Session: IANA Overview  
Thursday, June 27, 2019 – 09:00 to 10:15 WET  
ICANN65 | Marrakech, Morocco

**BRAD VERD:** Thank you. Welcome, everyone. This is RSSAC Work Session, and this scheduled here is the IANA review process. So, we will learn the ins and outs of IANA, PTI, and all this fun stuff. I think two things to pay attention to, if I may, Naela.

First and foremost is that you have the metrics piece. We've spent a lot of time looking at the CSC metrics that have been created for IANA, because they're community-driven, community-created and whatnot. I don't know if Naela going to cover some of that. I assume she is. Just kind of think of that, because that feeds directly into where we're headed with the metrics piece. Then, the second piece is the checks and balances between ICANN, PTI, and IANA. I think that'll be an interesting thing to pay attention to. So, Naela?

**NAELA SARRAS:** Thanks, Brad, and thanks for giving us this session. As Brad said, I think in the last year or two, I've been hearing a lot about IANA, PTI, the transition. We thought maybe it would be good to do a reset of what is and isn't IANA and PTI, etc., and what is it that we actually do. So, we put these slides, but please just stop me. I

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don't want to make this a long presentation about us. So, just stop me, let's interact as I go through these slides. Can you please proceed to the next one, Ozan?

I want to cover a little bit, maybe, about us at a team—the IANA team—the structure that we have within ICANN, and then a little bit about how we work with you guys, and maybe a little bit of an ask on some of the communication things around working with the root server operators. Then, finally, a pitch for the upcoming budget planning and engagement for PTI, because this is the time when we need to start that engagement. Next slide, Ozan, please.

Alright, so this is the dream team that makes it all happen. These are the folks that are mostly in the office doing the work. We're mostly based out of Los Angeles. We have one staff that works out of Reno, Michelle Cotton, which some of you work with. I think we are at 17 right now, and I think this is one of the highest number of staff we've had. I've been a ICANN for a while now—for almost 14 years. Kim is here, also, the President of PTI, so there's two of us at this meeting, and then there's a bunch of us back at the office. So, you should see some of those people, I think, for those of you that go to IETF meetings, the KSK ceremonies etc. That's our team. Next slide, please, Ozan.

So, a little bit about PTI, and then we'll really go into PTI and how that fits within ICANN. What is PTI? PTI is the acronym that stands

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for Public Technical Identifiers. This is an affiliate of ICANN. It is a separate entity and an affiliate of ICANN. Its sole responsibility is the performance of the IANA functions and delivering the services that are entailed in those functions on behalf of ICANN. So, you have two separate organizations, PTI, housing the PTI personnel, delivering the IANA functions. And then, under a series of contracts with ICANN, the work that PTI delivers is defined in those contracts with ICANN. Let's go to the next slide because I think that will feed into it very nicely.

So, how did this PTI come about? This is a really hard graphic, but I just wanted to put it there, maybe, for further review if you want to. This is actually a graphic that came from during the transition. If you recall in 2014, the US government announced its intention to no longer do the contract with ICANN to deliver the IANA functions, and then invited the community to start working on what the next setup will look like. We have the privilege of people that worked on some of these proposals during the two years or so where the work went on, and how to set up the new structure.

So, during that time, there were three different ... I'm watering down things a lot, but there were three different proposals that emerged from the names community, from the numbers community, and from the IETF community, on how to perform after the end of the contract with the US government. Then, there was ... Was it the ICG, Russ? There was a group that sat and took

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all the proposals and put them together into one big proposal that ended up going into what became what today's setup is.

Under those proposals, one of the things that strongly emerged was perhaps there should be a separate entity that houses the IANA functions. That came specifically out of the naming community. And so, that's what this is trying to convey. In that proposal, there was a call for let's create a separate entity that becomes—at that time was referred to as the post-transition IANA. That's that second gray box that's connected with ICANN. And then, in the next graphic, we will show the relationships better, and how all of that emerged. Go to the next one, Ozan, please.

Okay. After all these proposals came together, and the proposals were accepted, and the community said, "Okay, good. Let's go and implement all of this," and ICANN implemented the pieces that it can implement, this is what emerged, and this is what we have today. We have an entity called PTI, which is the Public Technical Identifiers, an affiliate of ICANN, and that's what you see where the top box has contracts with ICANN.

All the contracts that you are now familiar with are actually with ICANN. So, the IETF has an MoU with ICANN. You have the RIRs signed an agreement with ICANN, and then there is an agreement for the naming community, also with ICANN. And then, there are

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subcontracts that flow from ICANN up to PTI, where ICANN tasks PTI with performing the IANA services as the entity that is called PTI. I know this graphic has a lot of data, so maybe I should stop here and see if anyone has questions about this one. We'll go into the oversight a little bit of how that works. But if anyone wants to ask questions now, maybe this is a good time. Yeah?

FRED BAKER:

You mentioned the IETF as having a role in this. Is that the IAB, or is that some working group in the IETF?

NAELA SARRAS:

No, this is the MoU, the Memorandum of Understanding, that existed between ICANN and the IETF for years before the transition. And during the transition, the IETF basically, in their commitment and in their proposal, said, "The current setup is a workable setup. Let's continue it." Then, in fact, they were checked with to say, "There's a call for us to also create the separate entity that is called PTI, and we'll subcontract to PTI to do your work. Are you okay with that?" And the IETF was one of the ones that said, "Yeah, we're happy with that." So, that's that same agreement. I think it existed, I want to say since 2006, but I think I might be making that up. Go ahead, Russ.

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RUSS MUNDY: Yeah, Fred, there was a working group in the IETF specifically to look at this issue, but the agreement itself is the longstanding agreement between the IAB and ICANN. Naela’s description was good, because one of the informal feedbacks that came out of the ICG process was that the IETF really did not want to see a change to their agreement, and it all worked out that that was not ... That worked out fine. There was not a formal change that was needed to the agreement.

UNIDENTIFIED MALE: Naela?

NAELA SARRAS: Yes?

UNIDENTIFIED MALE: I wanted to make sure I heard you correctly. You said that there’s a contract with the naming community.

NAELA SARRAS: Okay, so yeah. That contract exists between ICANN and PTI. Thank you. That’s a really good clarification. So, there’s not one entity that can contract with ICANN on behalf of the naming community, obviously, unlike the RIRs and the IETF. So, the work that the community did to develop the metrics that we operate

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under, and all the policy leading up to how we should perform the naming function, that feeds into what the naming function contract that ICANN created between it and PTI. And in that naming function, it says, “You are to do all this work, that we’re saying yes to the community on your behalf.” So, that exists only between ICANN and PTI. Yeah? Yes, Paul?

[PAUL VIXIE]:

Okay, mine is how different is pre-transition IANA from PTI, just in terms of functionality and maybe structures?

NAELA SARRAS:

Yes. Actually, I think that’s the very next slide. We’re going to jump one more, and then I’ll come back to you. Not this one. Next one, right there. Sorry, one more. So, I think, Paul, your question was how is IANA different pre-transition than after transition, right? Besides the legal structures that we’re talking about, everything else pretty much stays the same. This slide specifically talks about what stays the same.

So, the definition of the IANA functions stays the same. It’s names, numbers, and protocol parameters. The registries that we maintain relating to the names, numbers, and protocol parameters, all stayed the same. All the people that were performing prior to October 201 performing the IANA functions

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also stayed same. We also put the location of operational information on IANA.org. That hasn't changed. IANA.org remained the same, all that stuff. And then, the way you interacted with IANA before and after the transition, whether it's through the root zone management workflow system or the ticketing system. All that stayed the same.

So, in terms of our day-to-day operations, we're still in the same office. We're still the same people performing the same functions. What changed for us is I personally ... My paystub now doesn't say ICANN. It says PTI. My health coverage information, when I deal with them, I say, "I'm an employee of PTI," not ICANN. But that's pretty much it. So, on an individual level, there's a few changes for us, but in terms of operational level, it all remained the same. Does that answer? And Brad?

BRAD VERD:

Can we roll back to the diagram, please? Just for everybody's edification, that IAB agreement, or the IETF box here that you have, that's where the agreement is for all your thousands of registries that you guys operate—not just the root, but all the protocol registries, correct?



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NAELA SARRAS: The IETF is the agreement for all the protocol parameters work. The agreement for how we maintain the root zone, that's in the box that's called root zone ... No, no. Root zone maintainer, that the work that is between ICANN and the entity that maintains the root zone and publishes the root.

BRAD VERD: I want to point out that IANA does a whole lot more than just the root zone.

NAELA SARRAS: Yes.

BRAD VERD: There's thousands of registries that they maintain—thousands. I'm not sure everybody in this room knows that. That's all.

NAELA SARRAS: Yeah. Thanks, Brad. That's helpful. Okay. Yeah, Russ.

RUSS MUNDY: One of things that the SSAC did, in part of the transition, was to do an analysis of that. And I don't remember the precise numbers, but it's approximately 5% of the actions counted by actions are root zone changes. The next hunk larger is the address registry

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transactions, and by far and away, like 70%, or maybe 80%, are actually protocol parameter transactions. So, a huge proportion by transaction is the protocol parameters for the ICANN.

NAELA SARRAS: Yes. Thank you, Russ. In terms of our day-to-day operational work, the bulk of our work has really been in terms of ... If you come and count our tickets that we work on, it's the IETF work that we're doing the most work. The complexity level between what we're doing in the root zone management function and the IETF is a little different. Maybe on the root side, it's a little bit more complex, but in terms of bulk, it's the IETF work that consumes a lot of our operational resources. Okay, I think Daniel, and then ...

DANIEL MIGAULT: Oh, yeah. I was just wondering ... I think the IETF owns a TLD and is asking the IANA to operate it. No?

NAELA SARRAS: No, there is no such ... You mean like dot IETF or something like that?

DANIEL MIGAULT: No, no, no. ARPA.

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NAELA SARRAS: Oh, ARPA. Oh. No. No, they don't operate that. No, IANA operates that. ARPA is one of the TLDs that IETF ...

RUSS MUNDY: Oversees.

NAELA SARRAS: Right.

RUSS MUNDY: But IANA operates it.

DANIEL MIGAULT: Yeah, you operate it, so technically you manage the servers?

NAELA SARRAS: Yeah, so that's a complex one.

DANIEL MIGAULT: Because I don't see the staff.

NAELA SARRAS: You don't see that staff that do the work or what? I'm sorry.

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DANIEL MIGAULT: No, I don't see operational persons related to cloud services or things like that. I was just wondering.

NAELA SARRAS: If you want, after this, I can show you how ARPI is set up, and where we ... Is that okay? [inaudible] everyone into that? Okay. Then, Ryan, you also had a question?

RYAN STEPHENSON: Yeah, I see that the IANA department is in ICANN, and I understand that slightly, because really the IANA department ... I'm just trying to get this. The IANA department is really PTI.

NAELA SARRAS: So yeah, Ryan. That's a good question. It's one of the confusing questions about this chart. Even though PTI, with the 17 people that I showed you, are the people performing the day-to-day functions of the IANA functions, we still need a lot of backup and support that comes from ICANN. So, this is the set of resources that provide those resources to PTI. Those resources are set up differently. Some are dedicated resources. Some are shared resources. This is to keep track of all of this, basically.

RYAN STEPHENSON: Thank you.

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NAELA SARRAS:                    Yeah. Yeah, Kaveh?

KAVEH RANJBAR:                Can I add a bit on ARPA or TLDs? IETF doesn't own any of those, and I know that because I was a chair of IETF trust, which basically managed all of the holdings of IETF. So, IETF doesn't own any TLD, but ARPA and a few others, like .INT are defined. So, .INT is a different structure but just as operations for IANA. So, IANA acts as a registry for some cases, and also [replaces] that registry, but it doesn't mean that IETF owns them. It's like everything else, like protocol parameters, port numbers, and all of that.

IETF just defines them, and then, of course, IANA has to operate them, but it's not like IETF is accountable or responsible for that operation. They expect that it works, and, of course, if not there will be something, but it's not that they own it, because legally, they don't own any of those. Legally, what they own from names is basically IANA.org, [net, com]. That's all ITF owns, plus trademark for all of the RFCs.

BRAD VERD:                      Daniel, can you turn your mic off, please?

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NAELA SARRAS:

Thanks, Kaveh. Okay. I think it's the next one, the one with the boxes. I think it's a nice recap of things that we sort of covered here. Maybe Paul, a little bit to your question about before and after changes. In the first box, under legal, we say, on PTI, it's a nonprofit public-benefit corporation, so it is a separate entity. ICANN is a member of that affiliate. It's organized and domiciled under the California law, and it's a 501(c)(3).

The organization itself, it has an annual budget cycle that it performs, and it is different than the ICANN budget cycle, which we'll go into at the end of this presentation. It has a four-year strategic plan, which is also different than ICANN, because ICANN has a five-year strategic plan. But I think in one presentation that Kim did yesterday, it's a little bit of ... It's very confusing to have two different cycles for the strategic plan, so I think there's going to be some work to try and merge those so that they coincide together with the ICANN one, just to make it a little easier. Then, its financials are independent from PTI, and it gets its own audit of the financials.

In terms of operations, it does the names, numbers, and protocol parameters via contract and subcontract with ICANN. And then ICANN provides—Ryan, that IANA box—provides all the resources that are needed to do. All the IT systems, the accounting, a little bit of the legal support, that all comes from ICANN.

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It has its own separate board that have five members. Three members come from ICANN executives themselves. As of right now, it's Kim Davies as the president of PTI; David Conrad, head of the CTO Office; and Trang Nguyen. Those are the ICANN executives. Then, there's two that come through the community through NomCom, and they're now Lise Fuhr and ... I'm sorry. I'm blanking out on his name. I'm sorry? Wang Wei, yes. Yes, thank you. Yes. Go ahead, Brad.

BRAD VERD:

My only comment there, to bring that box home, we all rely pretty heavily on IANA. The root data comes from IANA. And the board members here, two of them are nominated by NomCom. So far, we have not been voting for any of those people., because our NomCom has been a non-voting seat. So, here's another example, outside of the board, where a voting seat would be very beneficial, I think.

NAELA SARRAS:

Thank you. That's a really good point, because it's the same NomCom that selects the members for the ICANN board works on the PTI board. Thank you. And then, the last box was the staff. The staff remain, as the IANA staff is now the PTI staff. As I told you at the beginning, that's the change that happened for us in terms of who pays us, and who manages our health benefits, etc.

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So, now we'll skip over to the oversight. Ozan, please go to the next slide. Yeah, this one. I think this was the checks and balances a little bit, that Brad said to cover. Under the new system ... I worked in IANA before the transition, and pretty much our ... We had oversight, of course, that came through the different constituencies that we worked with, but this formalized that. Since the transition, it's been formalized a lot more.

So, I have three levels that are talking about the oversight, the policy, and then the operations of PTI. On the domain names side, on the left, we have the oversight coming from CSC. This is the Customer Standing Committee.

This is a new committee that was created, again, through the transition. It has members and it has liaisons. Two members come from the generic top-level domains, and two members come from the country code top-level domains. That makes the four. Then, it has several liaisons. You, the RSSAC, has one of those liaison seats and it's Liman here. The CSC meets every month and reviews the IANA performance of the naming function, and issues reports, and it's very active. It's been doing a lot of setup work that needed to get done after the transition. So, the oversight comes from there.

On the number resources, the oversight comes from a committee that was also created through the transition. It's called the



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Numbers Review Committee. They issue a report each year. They issue a performance report each year, after looking at all of our performance reports and determining how well we did.

Then, on the IETF side, the oversight comes from the IAB and the IETF leadership, also again, through reviewing. We submit monthly reports to them. They review our performance, ask questions, and it's Michelle that mainly manages that relationship—Michelle Cotton—in terms of answering for the performance, etc.

The policy on the names side comes through ICANN and all of its structures. So, all the work that's done by the advisory committees and the supporting organizations. The policy for numbers comes from the ASO, of course—the Address Supporting Organization. And then, for the protocol parameters, from the IETF.

And then finally, in terms of operations, who's performing these operations, for the domain names, you can see that it's PTI because that's what the transition called for specifically for domain names, is to create the PTI organization, and house the functions there. For numbers and protocol parameters, you see that it says ICANN under a subcontract with PTI, because those entities contracted with ICANN, and then ICANN subcontracted the work to PTI. Yes, Brad?

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BRAD VERD: Sorry to keep interrupting, but again, just for clarification, based upon the conversations that we've had previous, this week, is it a correct interpretation that under the domain name policy, where you see ICANN, that's really the community, and then under number resources and protocol parameters, when you see ICANN, it's ICANN.org?

NAELA SARRAS: Thank you. What I ... Yes?

BRAD VERD: There was a lot of confusion in this room over the week. I just want to point that out. It's different.

NAELA SARRAS: Thank you, and that's a really good clarification for this slide, yes. Carlos?

CARLOS REYES: Since you specifically called out ASO, do you want to specifically call out GNSO and ccNSO?

NAELA SARRAS: On the left side, right here?

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CARLOS REYES: Yeah, on the left side, for policy of the domain names?

NAELA SARRAS: Yes. I think Brad is pointing out an error on this slide, and I think you're right. I think it really needs to be ICANN, the community, with the GNSO, and ccNSO, RSSAC, and RZERC and all of that. Really, it's the whole community. It's not what we call ICANN Org, inside ICANN Org, basically.

BRAD VERD: I'm just trying to bring clarity, because it gets confusing, and if you don't quite understand it, you assume the worst.

NAELA SARRAS: Yeah, thank you. Okay. Take that note, thanks. Alright, so that was on the oversight. Any questions on the oversight? Now, if we go to the next slide, Ozan.

We talked a lot about what the structure looks like on the legal side. Now, what is it that we actually do? This is really answering back to what Brad said at the beginning. What is it that we do? What is the work that we do? And it's beyond just names.

So, this is just a picture of the IANA.org website, the front page of IANA.org. This is how our work is organized, in the three functions

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under domain names, number resources, and protocol assignments.

In domain names, this is all of our work with the TLD operators, the gTLDs and the ccTLDs, plus a few other links here. And I think this talks to what was asked earlier. We have the INT registry here. This [isn't] registry that we operate, so we act as the registrar for it. It is a very, very small registry. It has under 200 registrations in it at the moment. We work there under very specific rules of who qualifies for a dot INT domain name, and it's mainly intergovernmental treaty organizations. So, you have the UN.int—that type of organization exists under .INT.

ARPA registry, again, is one that we operate, as we spoke about earlier. And then, we also have under the domain names, is the IDN practices repository. This is the list of LGR tables. Yesterday, I talked to this group that were changing the metrics with the CSC on publication of LGR tables. That falls here under ... Historically, it fell under our domain names area. Go ahead, Russ.

RUSS MUNDY:

This is probably a good time to point out that I made a mistake in the percentages of activities. Protocol parameters are 77%. This is from 2014. It was published in the ICG final report. The domain names are actually second, those actions. There are number of them that are more than just the root zone, but they're 23%, and

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the numbers-related actions are 0.1%. So, the numbers are the smallest. The domain names are in the middle. But the protocol parameters are the massive actions.

NAELA SARRAS:

Okay, so that's good. Thank you, yeah. That's consistent. I was wondering why you threw numbers in there. So, we're moving to that middle tile, the numbers one. By count we do, I think, under 10 requests a year in terms of numbers. This is the allocation of IPv4 resources, IPv6 resources, and AS numbers. And then, there are five RIRs so one to two requests per year from each RIR is what we can count on, basically. Remember, we allocate a big space, and then they go through it, and only when they're ready, they come for more.

Protocol parameters, or protocol assignments in the most-right tile here is where we work on those registries. As Brad said, we have thousands of registries that we maintain. I think, depending on how you count them, I think we say there are roughly around 3,000 registries that we have in the IANA database that we maintain. Yeah, that's the bulk of our work there.

In terms of metrics, we have metrics that govern each of those areas. I don't have slides from the metrics themselves, but each of the contracts that we have with those entities define metrics that we need to perform against. I think, in the April meeting, I

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shared a copy of that metrics performance report that we provide to the Customer Standing Committee for the domain names area. There are about 63 measurements that we keep track of on each request and we report against those.

In the number resources, the same thing happens in their contract. They give us specific metrics that they want us to measure when we're performing each request. And protocol assignments, the same thing. Those same metrics that existed the original report carried over to the new structure.

All of our performance data is always under IANA.org/performance, and each month, we publish the reports that we submit to the different communities on our performance. So, all that is on IANA.org/performance. We probably could have put a couple slides there showing those, but it's basically reports that are posted on IANA.org. Did you want me to say anything else about the metrics? No? Okay. Go to the next slide, please, Ozan.

Pretty much, that first section was about what IANA does, and how it does it, and under what structure. Now, I'm going to move a little bit to how we work with you all, and then maybe a little bit of some questions that we could use clarification on, or maybe to think about for the future. Next slide, please, Ozan.

So, where we work here—where we fit in—is we're the resource for the data that goes into the information that you publish. We're

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the source of the data that is by the root servers. That's something that we work on every day, and that file is available to you every day through the Root Zone Maintainer. Then, occasionally, where we work with you is, we do change requests for the root servers themselves. Basically what they are is changing IP addresses.

Then, we went through a phase where, for a couple years, it seemed like we were doing a number of changes, but that was adding, basically, v6 to all the root servers. Now, it's gone down to we hardly have those changes happening anymore. So, if we do one a year, it's a stretch of those changes. Now, because of that—because we hardly have these interactions—when those changes do happen, we work a little bit on timing.

When you give us that change request we ask, “Is there a specific time?” because we know there's a lot of work that goes into changing an IP address or adding an IP address for a root server. So, we work with you on, “Did you want us to work on this on a certain schedule? Do you want it to appear in a specific push of root zone?” etc.

Because we don't work with you very often, sometimes when we get the request, we say, “Who is this from? Is this somebody that's authorized to be working on behalf of the root server operator? Should we be taking our instructions from them?” It's a little bit

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of a challenge when it does come up. Go to the next slide, please, Ozan.

So, what we do then is internally, we have a webpage in our Wiki, where we say, “For the A Root, this is who we should be working with. B, etc.” I did take a glance at that before this presentation, and we have out-of-date information there. For example, I’ll be honest there. I’ll tell you Matt Larson is still listed for the Verisign ones. So, that data is out-of-date, and I think it’s because we rely also ... When these things happen, we know the people. So, we wouldn’t reach out to Matt Larson in this case. We’d say, “Brad, who should we be talking to?”

All it is, it’s just names and email addresses. It’s because we don’t have that interface between us and you. How do we keep that data up to date, and how often do we need to update it? This is really more of a question to the group. How should we have that data up to date? And do need just two names, or one name, of who speaks for the organization?

If Jeff were to leave, and let’s say he’s one of the people that are authorized to submit those changes, how do we establish trust again? Do we take Fred’s word for it? Do I have to go back to the organization? Do I need something official from the organization saying it should be this other person? Those are things that I think



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it's time to start talking about, and so that's why we put it up here. It's the communication piece.

And then, what's your process for notifying us? If Jeff were to leave, who's supposed to notify us and say, "From now on, deal with X person." It's not an assumption that people that come to RSSAC are the ones that should be requesting and maintaining these resources, or the root ops or whatever. We don't have that assumption, nor should we, I think.

And then, are there emergency cases? If there are emergencies where we need to contact you, or you need to contact us, what's our method for having that channel? And then, are there really any emergency changes? We can't imagine a case where there's an emergency root change that needs to happen to a root server, but if there are, how should we communicate? There are really more questions here. So, go ahead to the next slide, please, Ozan.

In this slide, this information is from the IANA.org website, and all we do ... I was trying to show here that all we have is just, we have the 13 root servers and the 12 organizations that operate them, and their IP addresses, and then that's it. We don't maintain anything else publicly on the root server operators. The other information that we have, in terms of the people, is only an internal Wiki that we refer to.

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So, in the next slide, we have here maybe some ideas for improvement, and maybe even a discussion here for the group. One idea we thought about is maybe once a year, and we target around that same time of year, we reach out to all of you and say, “Are these still the people we should be working with?” If not, we provide you with some kind of a form in which to update that information, and we keep that information only internal. I showed you page previously to say, “Is there a place for that publicly?” and I don’t think that’s the right place for that information. I think it should only remain internal. So, that’s one idea.

Then, because we also operate under ... We’re supposed to be available 24/7 for changes, specifically related to root management changes. We do maintain a 24/7 contact information that our customers can use to reach us. That information is periodically shared with our customers, to tell them how they can reach us in case of an emergency. One idea is that we could share that information with you all also, periodically, and say, “If there is any emergency in which you need to reach us, you can use that information.”

In the long run ... and again, the resources and the volume don’t warrant it right now, but in the long run, we’d like to maybe create an interface. We have the Root Zone Management System that we use today to manage all the work that we do with the names

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community. Perhaps we need to create an interface there, where the root server operators can log in, see what data we have on them on file, in terms of who's authorized to request changes for each root server, and then who the contacts are.

It's a long-term idea, and in fact, I'll say after the transition ... The way we used to do these root server changes is when we had a change that we needed to send to the Root Zone Maintainer to put in the Root Zone, we had to send that manually with PGP-signed messages. So, we couldn't even use the Root Zone Management System for that. After the transition, it was a requirement that we at least do that part via APP, where we send it through the Root Zone Management System. So, that part—the interface between IANA and Root Zone Maintainer—does exist today.

We do that via APP, but the part between the root server operators and IANA, that's still manual. We still take tickets from you through the ticketing system, and then we key them into our Root Zone management system. So, that's the idea going forward. Russ, were you going to say something? Okay. I'm not promising that you will see this in the next six months or year. This is a long-term project.

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UNIDENTIFIED MALE: So, what kind of information you send by email to the Root Zone Maintainer?

NAELA SARRAS: By email to the Root Zone? Nothing. As of today, nothing.

UNIDENTIFIED MALE: Okay.

NAELA SARRAS: Yes, everything goes via APP.

UNIDENTIFIED MALE: Okay.

NAELA SARRAS: Yes, because all they do is the technical changes, so they don't need to see anything else. That was it on this communication with the root server operators. I want to jump into budgeting next, but if you have ideas for me on this communication piece ... Brad does. Yes?

BRAD VERD: I don't know if want to have the operational discussion right now. I know I'll certainly take these ... as the RSSAC chair, I'm happy to

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take these list of questions and actions back to the root ops meeting that is in Montreal, and that that discussion there with the larger group, if you'd like.

NAELA SARRAS: Yes, very much. Thank you. That would be great. Yes, Russ?

RUSS MUNDY: Just one possibility that strikes me ... Looking here, there's already some set of operationally driven aspects to first responder type of activity for DNS operations. It would seem like this might be a logical extension to that, as far as either reuse of the procedures, or maybe even reuse of some of the people, if they're the same, which they may well be.

BRAD VERD: Yeah, I don't think there's any reinventing the wheel here. I think it's just plugging in the right pieces and whatnot.

NAELA SARRAS: Yes, Carlos?

CARLOS REYES: The other idea ... I don't want to miss RSSAC, RSO too much, but from the RSSAC side, we also need the executive point of contact,

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and who actually does the appointing. Since we're asking the operators this information, maybe there's an opportunity where, from our end, on the policy side, we can coordinate with Naela, so that request goes once to the operators, once a year. That way, we don't have two separate processes. Just something, Naela ... Maybe you can I can chat about operationalizing that.

BRAD VERD:

Yeah, that seems like an interesting solution to two different problems. I like that.

NAELA SARRAS:

Me, too. Thank you. We'll work on that. Good, thanks. Okay, Ozan. Let's go to budgets, so next slide. This is about the engagement that we have to do every year for the budget. We are finishing up our fiscal year '19. We have a budget already approved, and we're ready to go into it as of July 1st for our fiscal year '20.

Now, because PTI is a separate entity, and has its own bylaws, it says in these bylaws, at least nine months prior to the commencement of each fiscal year, we are to go out and start working on the budget for the PTI. So, this is our officially lodging this work right here at this meeting. Kim presented yesterday at the ccNSO, and we're doing this here, and then there will be other occasions where we'll start gathering input for this budget.

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So, our bylaws say we're not just to put out a budget to say, "Here's our budget. What do you think?" We need to engage with the different communities and ask them what our priorities should be, communicate with them what our current priorities are, and what should they be as we develop this budget, before we put it out for public comment. So, this is this work right here, and it will for fiscal year '21, starting on 1 July 2020.

The bylaws say we are to communicate with all the SOs and the ACs, as well as—you can see here—the Registry Stakeholders Group, IAB, and the RIRs. So, it's basically going to all of them and asking them what they think of our budget priorities and what should we be focusing on. Because this is a really short meeting, there's not a lot of time that we could have asked all the SOs and ACs to tell us what their priorities are.

I think Kim is planning to hold a webinar sometime in July, where he'll invite the community to come and help present what the priorities are, and ask for feedback at the time. So, we're lucky here that we got this little bit of time to talk about this, but by all means, you should probably also see an invitation from Kim to join a webinar in July. This is probably to help you think about what we want, in terms of input, and then for you to see what we think our priorities should be, and then any input from you on that. So, this is going to all be taken into consideration as Kim and

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his team develop that initial budget that he puts out for public comment.

So, on the next slide ... And Kim is here in the room, so if you didn't want to talk in here, you can go talk to him directly, or you can email him. He's here to gather that input. So, in the next slide, what we did is we talked about the assumptions ... In building these assumptions—this is the things that Kim is going off of is that in general, customers are happy that we are doing as the IANA functions and the performance, and the services that we deliver.

Some of the ideas that we need to put resources towards, or some of the work, include things like TLD variants. So, there's a lot of work in the community now on deciding how to decide what a variant is of a TLD. And once we know what that variant is, what are the rules for delegating that variant? So, there's been years of work already on that front, and we're getting closer to the part where they start talking about delegating. Then, that involves work on the IANA side that it needs to do for those delegations. So, TLD variants will be an area of work. Then, future [inaudible] ... I think yesterday, that was brought up in this room, in terms of costs and funding, that we need to support that work.

In terms of count, I showed you a slide at the beginning where there are 17 of us. The assumption is that that's a stable count.



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We don't foresee growth the number, but also depends on what we're handed by the community in terms of priorities. But the assumption is that that count will stay the same. Next slide, please, Ozan.

So, those priorities, as we see them today, is the Root Zone Management System. This is the workflow system that our customers interact with on the naming side to lodge and maintain requests with us. We'll continue to grow that. That project has different cycles. We work on it every year. It's an ongoing project. We do releases. We think of more things that need to be done, and we continue to work on that. So, that will be something that we put fiscal resources towards.

Then, for the IETF community, that's why we listed here the Protocol Parameters Management System. So, all the work that we do with IETF community—the 3,000 plus registries that we talked about—that's mainly ... there's a lot of manual work that goes through that. We have a ticketing system that customers use to email. It comes into the ticketing system, and a lot of our work there is still very manual work.

So, just like we have for the Root Zone Management System for the names community, we have the workflow system. We've been working for a couple years now, developing concepts of how would we do the same thing for the protocol parameters. And

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we're starting to deliver smaller pieces of that work in the next year or two, so that's ... introducing automation for that area.

The IANA website that I showed the front page of a little bit ago has looked the same for a while now, so it could use a little refresh—a little bit of reorganizing of the data. If you go into the IANA.org website, and go to, for example, the list of TLDs that we have, that we maintain under the Root Zone page ... Now, it's a big list of 1,500 names, and you have to know what you're looking for to find what you're looking for there. So, that could us a little bit of reorganization. So, that's slated for some updates.

Variant TLDs, again, is something that will take work for us to implement. If you think about it, for each TLD, we need a way to designate what its variant is, and how they're delegated, and how they relate to each other. There will be some work there, in how that works in the Root Zone Management System.

And then, the KSK Rollover increased cadence is another area here that has been marked as ... How often do we do it, and what operational stuff do we need to build around that, and what processes need to exist, etc.? That's under the KSK Rollover.

So, these are what we have listed as the potential work with impact on us for the next fiscal year, but we're certainly here. This is your opportunity to tell us, "You're not focusing on the right things," or, "You should be putting resources towards other

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stuff,” etc. And as I said, Kim is here to take some of the input, also, in person. Yes, Brad.

**BRAD VERD:** Sorry. The only input I have here is something to think about, and it’s maybe a little premature, but I’m glad Kim’s here, and I’m glad [Liman] came back in. The RSOs have talked about some communications with IANA, and kind of being a point of contact. That needs to be talked about, possibly [developed] and flushed out. That’s just something maybe to have on the radar. I think it’s an agenda item in Montreal for the RSOs.

**NAELA SARRAS:** Okay. That’s a closed meeting, right, in Montreal? Yeah?

**BRAD VERD:** It is a closed meeting. I think when it reaches a point that ... Obviously, we’ll share with you what’s talked about, but maybe you’re invited as a guest to come in and talk, and we can share ... Not we, but the RSOs can share their thoughts with you on what they’re looking for. But my guess is that there’ll be a little bit of money involved to develop what I think people are looking for.

**UNIDENTIFIED MALE:** No, you made my point, so that’s fine.

RUSS MUNDY:

I like the list of priorities here. The question that I have about it, though, is really dealing with the KSK Rollover increased cadence. As I understand it—and I know this is really an ICANN internal kind of issue—but the planning for the next KSK rollover was being handled by OCTO. I informally heard recently it's been handed to PTI.

I was wondering if, as part of this, is there any projection on when some information about ... What's the plan for the next KSK rollover—timing, inputs from the community, and so forth? It was quite heavy for a while, looking for inputs, and we haven't heard many requests for inputs lately, nor have we heard what the expectation for some kind of information coming back—a plan, whatever. Do we have an idea?

[WES HARDAKER]:

Can I augment your question, so she can answer both at once? Really, the final line, the way I read that is that it almost sounds like a decision's been made, and to my understanding, there hasn't been.

NAELA SARRAS:

Yeah, thank you both. I'm glad Kim is in the room, because this is really more Kim's area, so I'm going to call on him.

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FRED BAKER: So, Kim, we're going to do a KSK Roll daily?

KIM DAVIES: That would be fun. On the question of responsibility, it's definitely PTI's responsibility to manage the KSK. The dynamic in the first rollover was actually OCTO was lending its expertise to do all the research and lead-up necessary, and then IANA was sort of pulling the trigger and doing the actual rollover work.

So, what we're really looking to do is normalize the operation. We did do a lot of outreach to get feedback earlier in the year. Our thought internally was that there was a lot of enthusiasm for the key rollover. We were getting a lot informal feedback—like one-on-one feedback—and we wanted a better way to capture that, and we didn't want to wait too long to be able to get that. So, we gave some presentations to trigger people mail the mailing list, to get their thoughts on the record.

That said, we also recognized we weren't in a position operationally to start the next rollover. So, we're still actually closing out the previous rollover. Those follow closely. We won't actually finish that process until August, when we delete the 2010 KSK from our last key management facility.

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So, our current timeline is that sometime in the second half of this year, we will put out for public comment our draft proposal for future KSK rollovers. I can tell you that there is an active draft being worked on internally. We have some ideas. They're still being vetted. I have nothing really to announce. When we say increased cadence, that's not a given, but I can tell you we're going to propose something more often than every eight years, and then we'll see what the feedback is.

MICHAEL [CASTOVAL]:

A direct follow-up to that ... Any efforts to increase the KSK cadence is going to require a lot more effort. I was partially involved in getting the KSK 2017 into existing operating systems, and the solution was to hard-code it in, not create a workable updates system. So, the fact of the matter is, as soon as we have the next KSK happen, people are going to start shoehorning in the new KSK, and we're not going to have a workable system.

This is a major issue that needs to be solved from the resolver level before we can even look at doing KSK rollovers on a regular basis, because it's basically a pile of hacks is how we did KSK 2017, at that level.

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**KIM DAVIES:** Okay, I think we're considering lead times of years, still. We're not considering it being very rapid. But I think the experience we got from the first KSK rollover was definitely very critical in how we define the next timeline, and I encourage you, if you have some thoughts, more specifically on how we can improve that for the future, please let us know. And if not, when we do propose a timeline, if you think it's not appropriate for vendors to work to that timeline, that would be very useful feedback.

**RUSS MUNDY:** Kim, thanks very much for that information. And let me say, as one of the participants of the DNSSEC Workshop Program Committee, that does program planning for these that happen at each meeting, PTI has an open invitation to use that as a forum to distribute information, get feedback. It fits very well with what we try to do in the workshops. So, I hope there is something that's discussable at the November ICANN66 meeting. That would be great if you could.

**KIM DAVIES:** Thank you very much. And I'm quite confident we'll have our proposal out by then. No one wants to get a draft to review just before Christmas. Practically speaking, it will be ready before that meeting, and we can discuss it then.

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NAELA SARRAS: Great. Thanks, Russ. Thanks, Kim. So, that was the end of the budgeting piece, and I don't think I have any more slides after this, right, [Ozan]? Yep. So, that was it from us. Was the helpful? Did that clarify a little bit, PTI, IANA, what we do, don't do? Okay? Well, thank you for your time, really. Thank you for giving us this spot. Really appreciate it.

BRAD VERD: Thank you so much. That was very informative. We appreciate you doing this.

UNIDENTIFIED MALE: Thank you from me as well. A small question ... Is there something we can do in return? Is there something that you would like to know about the Root Server System—you're involved in RSSAC, so I assume that you're well [inaudible]—but the Root Server System beyond RSSAC? Is there something that you would benefit from know that you don't know? Don't hesitate to reach out, I would say, if you come up with something.

NAELA SARRAS: Thank you for the invitation. I feel like being here has really given me a lot of insight. It's still a mystery to me, what happens



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between this and then the root ops. I know some of you are still the same characters in two different places, so I'll ask more on an individual basis there. But no, you guys have been very welcoming, and answering questions, and helpful, so no, but thanks. If I have any questions, definitely ...

BRAD VERD: Alright. I guess with that, we will ... unless there are more questions, comments. I don't see anything. With that we will close this session and adjourn. We are next across the hall, correct? [Ozan], you want to give us a ...

OZAN SAHIN: In the Zoom Room, we have a remote question, actually, that just came from [Andrei Nabuk]. "So, could we discuss about the time zone database?" That's the question.

BRAD VERD: The time zone database? No, that's out of scope for RSSAC. If it's a question for Naela, then they can take that up offline.

NAELA SARRAS: We can have ... if that person sees the presentations, they can email me. Yeah, you're right. It's a lot to say. I don't know what the question is, so I'm happy to answer whatever question comes.

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And most likely, I'll probably refer it to mailing list that manages that part of the work.

BRAD VERD: Any other questions? Anything from the room?

UNIDENTIFIED MALE: When do you need to have the feedbacks? What is the deadline.

NAELA SARRAS: Thanks, that's really good. I took out a slide that I probably shouldn't have, that laid out the timeline, but it was really hard to read. That feedback on the budget needs to come ... Basically, it's June and July, is when Kim is gathering this feedback. That's why he's also targeting July as the time for the webinar. So, if you have any input, please email Kim directly with this data. Yes?

KIM DAVIES: I will say, this is not your opportunity to provide feedback. We're trying to get a list of priorities for FY21, during this process, June and July. We will turn that into a draft budget. That draft budget will then be circulated later in the year, and feedback on the actual specifics of the budget is then also welcome.

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BRAD VERD: Yeah, that goes through the normal public comment process and whatnot. Yeah, okay. Anything else. Daniel, your mic is on. Do you need something? Okay. Nothing in the room? Alright, with that, we are adjourned. RSSAC has a meeting next, in 15 minutes, where? What's room? [Rosaree]? Yeah, which is right in this hallway. See you all there.

RUSS MUNDY: Yeah, it's 10:30, and it is a closed meeting.

BRAD VERD: Yeah, that is a closed meeting for RSSAC. Thank you.

**[END OF TRANSCRIPTION]**