
MONTREAL - GAC: Roots Server System Advisory Committee (RSSAC) Co-Chairs briefing to the GAC
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MANAL ISMAIL, GAC CHAIR: Good evening everyone. If you can please take your seats, we will be starting in a couple of minutes.

(PEOPLE ASSEMBLE)

MANAL ISMAIL, GAC CHAIR: So thank you everyone, and this is our meeting with the RSSAC, the root server system advisory committee of ICANN. I would like to start by thanking Fred and Brad for coming to the GAC and provide be a presentation on proposed... for the root server system and I have to say that we were trying to have this session in Marrakech, but unfortunately, we couldn't schedule on the GAC agenda but they were kind enough to come to the GAC leadership, and we have already been presented this model in Marrakech as back leadership, but we felt it's an important thing to bring it to the attention of the GAC as well so thanks again Fred and Brad for being so kind for the second time, and then coming to the full GAC plenary and providing this presentation, and over to you.

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UNIDENTIFIED SPEAKER: Thank you, Manal. So I'm Fred Baker, and this is Brad Verd. I work for a company or I'm on the Board after company called ISC, which is one of the root server operators that distributes DNS information through the Internet. Brad works for Verisign, which is another one of one of those companies and we have a number of other companies that are involved in the RSSAC, and in the root service, root server system. So let me walk through, what the system is, what it is likely to become, and how we're going to get there. This is I think you need to understand this is a sea change in ICANN and in the Internet in a variety of ways. And by the way how do I change slides? I click on this thing. Oh, okay okay so I -- great. Thank you. So the root server system started in 1984.

The protocol was written by a fellow who has been here from time to time called Paul Makapetras(sic) and implementation was done, and people started using it. Prior to that if you wanted to connect to some service on the Internet, you needed to know what the address of that service was, and you would type, I want to go to this set of numbers, and nobody could remember the numbers, and by the way they were completely unmanageable. So what the purpose of the DNS was, literally, to create a character strain that correlated with a number, and it could be gotten, and fairly soon after that, John Pastel(sic) who was at the time the guy that managed all of that information, asked a company, and...

BRAD VERD: I think it was the NSF.

FRED BAKER:

Okay asked a company to be a central control server of the information, and the interesting thing there was that it was hierarchical, so it became maintainable. Each company could do its own thing. Over time, he added people, he added companies to that list of companies that delivered service information, and then he died. And so the question became, how do we ever add or drop a company? How do we change the service in had any way? Because we don't want to have to dig up John's body and ask him a question. And so, the question was given to the RSSAC by Steven Proker the previous Board chair, was okay guys, what do we do? How do we actually make this happen? So now let me define a few acronyms. You're going to hear me use them, and you may as well know what they are. We talk about the root server system. The root server system is composed of the Internet a signed number authority. The IANA. The Rootzone maintainer and these various companies, which deliver information about the root. You know where would I find.NL. Where would I find .com, and deliver that information to folks that ask for it. The individual companies, and there's a difference in parlance in some cases we talk about the individual person, that operates those computers, that perform that service called a root server

operator. And in this new model, we're describing several functions. One of which we call the strategy architecture and policy function.

Basically the brains of the operation trying to figure out what recommendations should be made, and how would we do that? The performance monitoring and measurement function, which answers the question, how is it working? Should it change in some way? And the designation and removal function much the DRF which if it comes to adding or dropping an operator, makes a recommendation to the ICANN Board as to who that operator should be? The ICANN Board now does what the Board does which is to say okay really let's do that. And blesses that plan. There's also obviously a secretariat. Somebody has got to manage the writing and that kind of thing, and a financial function, which is the people that manage the money, the one acronym that I didn't mention here is a root server. What is a root server? A root server is an application running on a platform. Could be a virtual platform.

Could be a physical piece of hardware, but running on a computer in some way, it answers questions. You want to know where.com is. Okay I'll tell you where.com is. And delivers that information. So just you'll hear me use these acronyms and this is what I'm talking about. Next slide please. Now, the effort that was done

by the RSSAC is actually started 4 years ago I believe. Steve Crocker the Board chair came and spoke at a RSSAC dinner and he laid out a challenge. He said listen guys we need to be able to answer this question. How do we add or drop a root server operator and the RSSAC spent 3 years talking about it? Came up with a plan that actually ended sometime last year. And so, they the ICANN Board and the ICANN organization and various other components have been working with it next and are in the process of taking steps. So this thing that we have put together, that the that we the RSSAC -- and what is the RSSAC. The root server system advisory committee so the people that try to inform the ICANN committee about the root server system what. We put together is an initial model. We expect that it won't probably -- as we work with it, we'll learn some things, and it will change, okay?

But we put together an initial model. Okay next slide please. So 2014 -- it's actually 5 years ago. So this started at the end of the IANA transition, and we recognized a need to do some things, and we had a number of questions, which are listed here on the slide. We actually had had quite a few more. And we started that process of doing so. And we did that largely in workshops. The representatives from the different operators came and sat in a room somewhere. Sometimes hosted by Verisign, sometimes hosted by the university of Maryland. Sometimes other places. With a view to discussing and working all this this out. Next slide.

So over that time-line, we had a number of meetings, and a number of topics, and handed out suggestions and people you know would you please write some text, and tell us what you think about that, and then we'd argue about the text and if fix it and ultimately, ultimately after 6 workshops came with a proposal which is RSSAC 37. Which we gave to the ICANN community. And you people, have been discussing it for almost a year.

Okay so next slide. Now the root server system, let me kind of break down what DNS is, and how the names are composed. If I am looking for a computer, whose DNS name is let's say www.example.com. First thing that I need to do is I need to find.com. I need to find the TLD that gives that information. And for that, we go to the root server system. Which is over 1000 computers world-wide, and I do mean world-wide. They're everywhere. And they deliver what we call the root or the rote zone. Which is the information that has been put together by the IANA, and has been encoded by the Rootzone maintainer, who is part of the RSSAC, and is now given to us as a blob, which we distribute as needed. And then what that information give is the top-level domain, which in that particular name example many.com would be .com, and then that TLD turns around, and so whose example? There must be an address for an example many, and that guy turns around and says, I have a web server

somewhere. And finally gives the address, the record, to the person who is at or the computer that was asking the question. Now there are 12 organizations that do this service. And we've listed them here. There's cogent communications. There's ICANN Internet systems consortium and so on. I won't read the whole list, but over a thousand computers operated by these different companies, and that is who you ask in order to translate a name into an address.

Next slide please. Next slide. There we go. Now, of course part of this, we had to figure out why we did what we did, and we describe 11 root server principles. So these principles are things like the root server system should be stable and -- if somebody asks a question, they should get an answer, and they should get that within a fairly predictable amount of time. It's going to be a global network. It should be everywhere on the globe. And it requires a unique public space, and each of the companies involved needs to be transparent in its operation. We need to be able to report on statistics and let people comb through and perhaps even find problems. There's 11 principles and I won't go through analyst them all, but these are kind of the important principles behind the thing. And two things I will highlight though and that is that each company is a separate company, and nobody can come in and tell us, you must operate your system in this way. They are independent in terms of how they run their

operation. But the information that they deliver is always that information from the IANA. So if you have a country code top level domain or if you have a generic top-level domain, then that TLD company will give the information about its services to the IANA. The IANA package as them up the IANA information. Gives it to us and we distribute it and that's the information that goes out. Cold stop. You change the information. We change you in 20 minutes. And that -- those are fighting words and people say well, we really think you should do something different. We want to know why, and we want to, we want to make sure that the service does what it intends to do. And since we're actually delivering the service together, it has the interesting impact that we're actually -- we work very well together. We respect each other's boundaries, and at the same time, you know we're delivering a common service, and we actually work pretty well together. So there are these 11 principles. And that we try to achieve. Next slide please. So the model, I told you a moment ago that a TLD will tell the Internet assigned number authority something about its service, the Rootzone maintainer will take that database and code it into something that we call the Rootzone, give that to us, the operators, and we now distribute it in response to queries from throughout the globe. And this picture kind of shows that. This is a pretty good schematic description of the Rootzone and how it works.

BRAD VERD:

Brad Verd. Real quick on this diagram the easy way to look at it is kind of give you the scope of the document. If you look at the white box with the IANA function and the Rootzone maintainer, that's what was covered in the IANA transition. Kind of the governing there. And the piece in the blue box is what are sack 37 and 38 are trying to address. So nothing more. Just that light blue area. Just -- it's a visual representation of the scope of the document.

FRED BAKER:

Thank you, and now then at the extreme right side you see something that says DNS resolver. What's that? Well they have names like Google DNS. Or it might be your corporate DNS service. It might be open DNS. It might -- there's quite a number of different I think 10,000 something like that. Different services that collect the information from the DNS, including the Rootzone but then also names that are in common use, in .com, .US .NL and deliver them on demand to computers that actually use them. So when your laptop says I'm looking for example.com it will generally talk to a resolver which, if it lacks information, it often has cached information but if it doesn't it goes to whatever service it needs to in order to in order to resolve the information. So next slide. Now the design principles, and there are a number of them that we talked about, basically we wanted to avoid

conflicts of interest, we wanted to keep functions that were separate, separate, and we wanted to do so in a manner that was understandable by the community in general, and transparent, and accountable. And so we came up with a model based on those principles. Next slide. We also have a number of stakeholders, which we are accountable to, part of them is the IATF and the Internet architecture Board. The IATF designs the protocols that we use, and if we're doing something different than the IATF intended we are doing something wrong so they're somebody that we are accountable to in terms of our protocol operation. And the Internet architecture Board then defines the architecture of the Internet, and you know we're responsible to them in that sense. The RSO.

The different companies that are involved. We're mutually accountable with each other, and there's Dale daily operations. Things that go on and somebody will see something and gee, that shouldn't have happened, and we will send a message around and oh, bad thing happened over here. We will go fix that. We talk to each other actually quite a bit. In order to make sure that the service operates in the way that it should. And then more generally there's a list of different organizations and constituencies that that we serve that we are accountable to. They include the TLDs. They include you know various and sundry, and in if general we have collected them all together and

we call them the ICANN community. You notice that I don't use the word empowered community. Or the phrase empowered community. The reason is us what it's actually larger than that. The empowered community is important to the function of ICANN itself, but you know we're talking about the operators of equipment throughout the world, and so on and so forth so generally that which constitutes the ICANN community. Which includes but is not limited to the empowered communities, we view them as a stakeholder. And by a stakeholder, the ICANN glossary has a description of what a stakeholder is, if you're affected by something, I do then you're a stakeholder of my function. My organization, my whatever it is that it I'm doing. In this we add the meaning that you're involved in decision processes. If we were to decide that we needed to add a new RSO we would do so because somebody was having a problem and they said, we're having a problem. And then, we would talk about that. We would -- we, the community, would talk about that, and come up with however that works. So the ICANN community here. That is a really very large bubble. And involves a lot of things.

Next slide. Now, for governance, we have a question for you. You're going to make these slides available right? So if you're looking for the slides, Manal will know how to get you there. I mentioned 5 different parts of the organization, the PMMF. The

secretariat function and so on and so forth. You will find them in the blue boxes across this thing. They report to and communicate with the various stakeholders that we're talking with, and then turn around and talk with the RSOs. And the performance monitoring with metrics, the development of the root sources and ultimately the decision processes involved in that. Now we've highlighted.

MANAL ISMAIL, GAC CHAIR: Sorry to interrupt. If you can speak closer to the microphone?

FRED BAKER: Sorry. I hope you've been able to hear up in it will now. But okay so there are 2 red bubbles in the lower right-hand corner. We talk about designating an operator and removing an operator, you remember that started out with the question from Steve Crocker, how do I do that? And one of the decision processes then is to say, okay, we see a need to do that, to change the list of companies that are involved in -- or the list of organization that is are involved in that, and we would designate an operator, which is to say that the designation and removal function would develop a Board resolution that would be discussed by the ICANN Board. There would probably be a huge amount of discussion in the community, and then we would do that. Or we could remove an

operator. Why would we remove an operator? Basically one of 2 reasons. One of them is they decide they no longer would be an operator. When the guy goes running out the door you kind of can't stop him.

Okay if they resign, I guess they're going to get removed. But then also if an operator is not performing at the level that we would like them to, then something needs to change, and at the end of that discussion, the final step would be to say, well you can't be an operator. If they can't remedy whatever it is that is the issue. And would we designate a new operate or? Probably us what we felt one was needed. Let's imagine just for fun that, and I'm not really making a particular case here -- but you could imagine thus -- imagine in central Asia we find the compute remembers not getting the information they need or they're not getting it in a timely fashion, then maybe the community would come back to us and say, you know you guys need to change that, and if you can't change that we have this company over here we'd like to have perform the service, okay so that would be an example many of why we might designate or remove an operator. Next slide please. And, of course, what we're trying to do is achieve balance. This is not something where there's one party that is in control of everything, but rather the interplaying of a number of different parties, and they include the things that I've talked about up until this point. Next slide. So the secretariat function as we

envisioned the structure of the root server system is essentially the people that hold the pen. And perform many of the staff functions that we're used to in ICANN, and so it becomes a conduit for Internet community, interaction with the RSOs, distribution of information, and hold common RSO assets. Now what assets do the RSOs hold in common? I think the one thing that we really hold in common is rootservers.org. So if you were to sit down at your computer and type I want to go to rootservers.org you would get a picture of the planet, and be able to drill down to in my city or in my country, what root servers are there, and how many of them come from each individual company, or each individual organization. So the secretariat has the theoretical ownership of those common RSO assets. Next slide. I talk about -- or I mentioned earlier that the strategic policy function is the brains of the operation. They really do most of the analysis, and come up with the conclusions that need to be made, whatever they are, and they are quite a number of responsibilities, and I'm not going to try to read every bullet here, but the responsibilities... and what it does then is that it develops the logic behind whatever changes or whatever, whatever progress needs to be made in the evolution of the system. Which might be that we don't need to change it you know.

It's operating as intended. Or it might be oh we need to add some functionality somewhere or you know do something, so that is

what that does. Next slide please. Now the one of the outcomes that might come up with is we just don't have enough resources or we have an RSO resource that isn't operating as intended or something like that, and so the designation and removal function exists all the time but is called into play at this point, and decides to make a recommendation concerning a new operator or the removal of an operator and change the set of operators. Next slide please. Why would we do that? Basically because the data tells us we need to, and by data, part of that is information that is collected by the root server operators just in the course of daily events, we're getting so many requests using UDP. So many requests use IPV6 using TCP using whatever it is being used, we measure that, and you know maybe we find that, that something has changed that needs to be looked into. So we've looked at RSO technical measurements, or metrics, we also look at nontechnical parameters. You know is the data that's being delivered actually the IANA data, or did it get changed somewhere. If it got changed that would be a problem. And you know we would be a violation of a fundamental principle. So on and so forth, we look at technical metrics. We look at nontechnical metrics that gets collected together, as the RSS metrics which are in turn interpreted by the by the strategic architecture function. And as a basis for decisions that would be made about that. Next slide please. And by the way that all costs money. And so we have accountants and we have you know the various people that are

involved in financial operations. And our expectation in the current -- the way we are expecting the plan to work is that the actual people would be housed in ICANN.org, but they would be doing that function specifically for the root server system. Next slide. Next slide please. Okay so what are the questions? What are the issues that the financial function is looking at? Well frankly there's some research and development that has to happen, and that might need some money in order to make it happen.

There might be implementation costs related today the model. There might be operational costs in terms of operating the root server system. We need a reserve for emergencies, and we frankly expect that the root server system works, and it does most that have needs to be done, but the ICANN community might turn around and say we would like it to work better here, or you know in this place and in this way. And what we've been told is that if the, if the ICANN community wants changes made to the RSS, ICANN will be on the hook to pay for them. So now there's cost of getting here. Those are the major questions that the financial function work with.

BRAD VERD:

Can we go back a slide please. On the financial function part of this that isn't necessarily directly called out is that this currently

is a non-funded mandate to the RSOs. So since the inception of the Internet it's been volunteer basis. And as we work through, as we went through this this 3 and 4 year exercise to identify kind of the governance going forward, the group pretty much agreed that there is a need for funding, and that's where this is coming from. Just us so everybody has the correct context.

FRED BAKER:

Yeah. Good point. Thank you. So next slide. The and again. There we go. Now, one of the questions that we've been looking at is how do we measure, how do we report the operational resource that is are necessary to actually operate the service? And what we initially described was something we called BBQ which is a function that includes band width and packets per second and queries per second and then becomes kind of a new ministry I are measure of how well we're doing. We are moving beyond that particular formulation but those are the kinds of questions that we ask in determining how well the system is working and what might need to change. Next slide. So this is stated as if it was a formula. I wish it was. It's not. But ultimately becomes an operational, so how much money do we have to spend, and.

BRAD VERD:

If I may this is Brad. This was the direct result of working with the Board as we were kind of finalizing what thought of the model. The obvious question came up was how much does this cost? And so they kind of tasked us to come back with a dollar figure and so we went back, and tried to put a dollar figure on this is, is very difficult because there's so many different variables involved, so what we tried to do was try to normalize it, and say, well you can -- if you look at the band width packets per second and queries per second you could come up with at dollar figure for the cost to run, and then going using industry standard pricing figure out what the cost is, and then what isn't necessarily and that's just a base cost throughout the baseline of what it costs to run and then there is the function of what is the risk level that the ICANN Board is willing to accept for what they want for those 3 different things. Capacity. Packets per second and queries per second. So that's just this was a first attempt, and we knew this was going to change, and even since we've turned this in, we've had many discussions around this, and kind of modified this a bit. In our discussions.

FRED BAKER:

Yeah, so this is actually a current activity of the RSSAC. What we call the metrics work party. And I don't have a slide for this but let me talk a little bit about how we answer questions like this. We

obviously have representatives of the root server operators. A number of whom are actually sitting in the room with us right now. We also have other people who are DNS experts, and operational experts in different ways. That contribute their expertise that we call the RSSAC caucus. And so when we go attack questions like this, we go to that collection of people, perhaps what, 150 people, something like that.

BRAD VERD: It's less than that but yeah.

FRED BAKER: And say you know we'd like to see some work done on that and they have meetings and talk about it. So what we have going on right now, at one of the big things we have going on is figuring out the metrics and figuring out what we should do as an estimate of the requirements of the root server system. So next slide. So this is back to your comment, that we have cost of value. We have a cost of risk, and that ultimately becomes a cost, and what we're looking forward to, money to pay for. So next slide. Now this is a review of the slide that I showed you a little while ago that showed the stakeholders and the different panels that make up the root server system, and so on and so forth.

With respect to them, we made 3 recommendations. And so click again, if you would, there we go. So yeah, I was expecting that to show up on the left side. But okay fine. We have it here. So our first recommendation that we gave to the ICANN Board was that the ICANN Board read the model that we put together, and maybe comment on it. Maybe ask for something to be changed. And then initiate a process to produce the final version that have model for implementation. That happened middle of last year. And so the ICANN Board has been working through things since then, and I believe they're going to vote on a resolution had this week

BRAD VERD:

Yes, I believe we will get a resolution here in Montreal to start this process, that addresses recommendation number 1 of finalizing the -- working with the community to finalize the model.

FRED BAKER:

Right. Recommendation 2 in the last few slides I've been talking about okay, so we need to figure out how to measure it, and what it costs and so on and so forth. And figure out how best to make sure that the model is working as it should. And our recommendation was, number 2, we probably don't know everything. And we probably need to be improved. So we've

been working on that. The third recommendation then of course was to implement the model, and that is something that we expect to happen over the coming couple of years. So did you want to get in?

BRAD VERD:

I would just say that the recommendation number 2 is you can't identify the true cost until you know what the final model would be so you need to figure out what the answer to recommendation number 1 is and then recommendation 2 is also part of I believe part of... goals to put a price against this. And then obviously recommendation 3 would be the implementation of the outcome of recommendation 1, which is we are assuming will be a resolution from the Board here in Montreal to create the governance working group will go forward with representations and create that final model.

FRED BAKER:

Okay so next slide. Yeah, so, with that, I've pretty much described where we've been, where we think we're going, and what the process is right now, including the fact that the ICANN Board is voting on a resolution this week. I can imagine that, as we were going through, you had questions come to mind. And please feel free to ask questions.

MANAL ISMAIL, GAC CHAIR: Thank you very much, Fred and Brad. I have China requesting the floor please go ahead.

CHINA: Guo Feng for China, for the transcript. And I would like to thank you first Fred and Brad for your presentation. We appreciate the efforts done by RSSAC in setting up such a model. For the root server system because in my view, nowadays, the Internet is so important as the most important economic and social platform, so I think the root server system is directly related to the security and stability of the Internet. So the accountability transparency, and multi participation of the root server governance is essential for maintaining the trust of the global Internet. So my observation is that because this task, this model is so important that I think the meaningful participation of government in this model, also in this process, is critical and crucial because it is not an issue, only issue of -- about technical sure, but it is a policy, and also security issue. It is security issue at national level as well as at the global level. So, you have shown us there is a dark Web about the governance model. So in this diagram I think it might be appropriate that government have a place, appropriate place in that model.

So with this, I have two further questions. Number 1 is, do you have any future plan in your... thesis to accommodating the

governments views and opinions in this model or in this model development process? Number 2 is you have shown us there was a slide about the designation and the removal function, so my question is, second question is, how do you identify the qualified root server operator, the new one, and do you have the criteria for removing the old one?

FRED BAKER:

Well thank you for your questions. Two of them. One of them, you asked is there a place for government in discussing all this, and yes of course there's place for government. That's why we have a GAC. And you know so you're sitting here, and I'm commenting to you because the governments are important, and you know that is just a fact. So the other, you ask how do we identify a qualified root server operator, there is -- we have a number of documents that are numbered. RSSAC 000 and 1 and so on. I think we've gotten as far at 44. One of them that is very important in this is RSSAC 001, which is the expectations of a root server operator, and it lists a number of points that would be critical, for example it says that the information that is delivered by the root server system, to whoever is asking it a question, has to be the information that it got from the IANA, and it needs to be signed using the IANA key. If it's different you know it's doing

something that is not what the root server system is intended to do.

And there are a number of other points in there, and I would encourage you to go read the document. And so, to disqualify a company or an organization -- let me be careful to say organization because not all of the roots are readers are companies in the usual sense of the word -- but if we're thinking that we need to add a root server organization, then the first thing that we would ask is do we have the candidate and does the candidate meet the expectations of a root server operator. If it doesn't meet the expectations, it's not one that we are going to be looking at. And now that -- then a whole lot beyond that becomes business judgment. You know is this company going to fail in the next 5 minutes? You know, maybe we shouldn't pick that one. You can imagine a long list of things that we would look at, and no it's not written down in the sense of check this box, check this box, check this box. But we would look at the organization and determine for ourselves whether it had the financial capabilities. Whether it had the operational capabilities. Whether it had the ethic that the root server operators carry really very personally. And is someone who would be a good root server operator, and then you know having done that analysis, the DRF would then make a recommendation to the ICANN Board. The.

BRAD VERD:

Quickly if I could expand on what some of what Fred said. He mentioned RSSAC 001. That's currently possibly being reviewed and replaced with the output from our metrics work party that's under way right now. So that document is a number of years old and we are looking at updating that. In addition, you might want to look at RSSAC 24, which talks about key technical elements of a potential root operator. And then I think if I could go back, our -- to what was said in the presentation RSSAC 37 again is the beginning after conversation with the community to finalize the model. So some of the questions you're asking haven't been finalized. This is a suggestion, based upon our expertise, and but we certainly feel that having the conversation with you to identify what those triggers are for removing a root server operator would be in that conversation, which has been taking place, RSSAC 37 went to the Board I think last June, last year, June so 2018 June, and they went out for public comment, so there are comments that came in on it. And you know so it's going through the normal conversation with the community, as we move forward with it, and so, that's -- thank you.

FRED BAKER:

Could we look at slide 7? There we go. Okay so I identified that we had 11 principles that were important to the root server operation, and to the management of the root server system. And

those are in RTEK37 and you can look it up and read the original text there. But we would be operating very much on these principles in had trying to determine who that operator might be.

MANAL ISMAIL, GAC CHAIR: So. Thank you again thank you very much. We have exceeded the time, so I'm sorry to turn you down, but I mean, if we still have questions, I think we can maybe communicate with RSSAC, and seek answers to our questions. Thank you again, thank you very much. It has been very informative and thank you everyone. The -- for those who will be attending the focal group and subsequent procedures the meeting has started a few minutes ago. It's at 512G room, 512G. And for everyone else, we will be meeting here tomorrow at 8:30, I do apologize if I'm a few minutes late in the morning. I have a meeting from 7 to 9, I have flagged that I need to leave at 8:30. But if I'm a few minutes late, please excuse me. Thanks again, yes Fred please go ahead, I'm sorry.

FRED BAKER: Okay so one other thing, Brad and I are here all week, and please feel free to grab us in the hallway and talk with us. The RSSAC will be having meetings. And most of those -- all of those -- all of them are open and you're quite well document sit in on the meeting, and we have a mailing list if you have questions you would like to

ask the RSSAC. You can mail an e-mail to ask -- RSSAC at ICANN.org.

BRAD VERD: Thank you.

MANAL ISMAIL, GAC CHAIR: Thank you. Thanks. Thank you, everyone.

[END OF TRANSCRIPT]