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MARRAKECH – RSSAC Work Session: RSS Governance  
Tuesday, June 25, 2019 – 13:30 to 15:00 WET  
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FRED BAKER:

Okay. So, what's going on here is we have a public comment period going on with 037 in concept paper and so on and so forth, and it seems to Brad and I that it'd be nice if we had a comment in the comment period. So, we want to talk a little bit about that comment and what it would contain.

Carlos has put together a strawman and that's what you see on the screen in front of you. So the question is, first off, is this the right comment to make and how might we change it to be more right? Whatever that is.

I suspect that this is not a 90-minute discussion, and so after that I think we may as well move directly into the metric discussion starting the activity tomorrow morning and knowing that we're missing all the people that are online.

In the spirit of agenda bashing, is everybody okay with that conversation? No?

BRAD VERD:

Just for clarity, once we're done here, you want to move directly into the RSSAC metrics or give them time back to go work on it?

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*Note: The following is the output resulting from transcribing an audio file into a word/text document. Although the transcription is largely accurate, in some cases may be incomplete or inaccurate due to inaudible passages and grammatical corrections. It is posted as an aid to the original audio file, but should not be treated as an authoritative record.*

FRED BAKER:

Well, I'm willing to do either one. But yeah, we could give the time back and let the guys go work wherever if they want. Seeing everybody staring at their computer screens, I'm going to assume that you agree with that.

Okay, we're looking at Carlos's strawman proposal for a comment in the comment proceeding and I'll give you guys a minute to read it. That is the entire comment – all of its glory.

Okay, so let me throw out the stuff that I was talking about as people walked into the room and before we started recording. If I was a member of the community, just one of the 500 or 1000 or however many people show up, I think I would read this and say, "Yeah, yeah, yeah," whatever and go away. It seems like it's appropriate to say something about the problem we're trying to solve and where we're going with it. And the problem we're trying to solve is, in essence, how do you change the set of root operators? How do you add one? How do you remove one? What is the sustainable model for making that operate, all that kind of thing? Ryan?

RYAN STEPHENSON:

Hi, Ryan Stephenson [inaudible] to DISA. Third paragraph, it just needs an E after the TH.

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FRED BAKER: The first word in the paragraph is “the,” not “th.” Okay. There’s nitpicker among us. Alright, okay.

Am I just being stupid or is it reasonable to talk about what it is to put in a sentence or two sentences about what we’re trying to achieve? Wes?

WES HARDAKER: Well, to a large extent, I think that the problem is defined in the call for comments, right? But we should refer to that completely. So my point is going to be, shouldn’t we refer to more than just 037? Specifically for the call for comments, it was on three documents, not just one. So, shouldn’t we call out 037, 038 and the concept here – thank you – which helps define the problem further and more specifically I guess it references the problem by referencing those three documents. I guess it’s 038 that’s missing.

FRED BAKER: 037 is the model and 038 is the advice saying, “Go read 037.”

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UNIDENTIFIED MALE: So, 038 is not out for public comment because there's really nothing that public could contribute to the actual recommendations from RSSAC.

FRED BAKER: Ending of the call for comment is on 037, the concept paper and then the GWG inputs, which there are two.

UNIDENTIFIED MALE: Correct.

BRAD VERD: So, I'm fine with Wes's comment to add those other documents in here. I think if we're going to give a little bit of history, I think if we go back to some of the things that we've stated publicly, like there was three questions that we wanted to answer when we started 037. Accountability – who's holding the RSO's accountable for what? Continuity – how are we assuring continuity of service? And who are the stakeholders? So I don't know if you want to cover all three of those or one of them or put them together or something.

FRED BAKER: Maybe just a bulleted list. We were asked to solve these problems. Add something about that. I guess I'm just thinking

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that I would like people to read this and feel like it said something besides, “Yeah, we agree with ourselves.” Did I see a hand over here? No? okay.

RUSS MUNDY: Thanks. This is Russ. I was just looking at the public comment page on the ICANN website and it does list four items. So, we just need to be consistent with that, I think.

FRED BAKER: Well, either that or simply point to the page.

UNIDENTIFIED MALE: So, the highlighted text here refers to the two of those four, the charter operating procedures and the work plan. Do we need anything more detailed than that?

UNIDENTIFIED MALE: I think that we don’t need to be more specific than that because they refer further on to the other documents, so there will be a chain referral, and to me that’s okay.

FRED BAKER: Well, so it sounds like we’ve given Carlos some things to think about and he can come back with additional words at some

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later point. What I'm thinking is at this point we should close this topic as far as the big group is concerned and give you guys some time to go back and work on the metrics. Is that your view?

BRAD VERD:

Yeah, I'm fine with that unless we want to sit here and wordsmith this right now. It's really up to the group here. We're happy to go off and wordsmith it and come back to you, now we've a little bit of input. I will add that I think it's important that maybe RSSAC post these comments sooner rather than later, even though the deadline is August 9 because I think people will go in and read it to see like, "Oh, do I want to comment [on] what other people said?" I think it'd be important for RSSAC to be there sooner rather than on August 9.

WES HARDAKER:

One clarification. Is it customary to have ... the first sentence reads, "On behalf of the RSSAC, the RSSAC co-Chairs welcome the public comment." Why the Chairs as opposed to the RSSAC as a whole?

FRED BAKER:

If you guys all agree with it, we can say the RSSAC.

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HIRO HOTTA: This is Hiro. In the third paragraph, we do have a word for prospective charter or the envisioned work plan, but there in front of us there's the names of the documents to be commented. Named as draft charter and the procedure and draft work plan, so I recommend that they are changed to draft.

UNIDENTIFIED MALE: Yes. I was going to say, in following what Brad said, if doing this sooner rather than later is important and we know why we're trying to do this then if we felt like it in about five minutes we could wordsmith this and have something and get it in now, which if turning things early sends a message, sending this in during an ICANN meeting I think would say we're on top of this. It just doesn't seem like there's a whole lot of disagreement on what to put in, it's simply stating the motivation again. And if it's simply those three points, we could draft it while we're doing this, and in 20 minutes read it and agree to it. I'm just proposing. Carlos can do it his sleep.

FRED BAKER: And that make sense to me. So, my thought at the moment is Carlos is busily doing this, let him do so, and we can run by it later in the day. But we've got a number of very high powered people sitting here, then we may as well go do something useful.

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Okay. Let's proceed on that basis and we can discuss this next time we're together, wherever it might be. You guys, do you want to be here talking about whatever topic or do you want to just be free to go somewhere else? We have the room.

LARS-JOHAN LIMAN:

So, if we have time for metrics now, what I would suggest is there's a couple of things that we can talk about that are not sort of the big topics that we talked about yesterday. There's a couple of little things that we can get into today. I would prefer to save the bigger questions for when the caucus is here. I think that would be important. And also I'm not really prepared. I was expecting to have some more time tonight to work on some things, so that would be my suggestion.

FRED BAKER:

Okay. I'll just pass the ball along to you then.

LARS-JOHAN LIMAN:

Okay. I had just sent an e-mail to Ozan. I don't know if you have up yet, but I think the first thing that I would like to go over is it has to do with how in the metrics we would represent the levels of uncertainty or precision. Previously there were some suggestions that "Hey, when you put a metric up, you should also include the standard deviation." So I have about 20 slides



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here to convince you the standard deviation is the wrong approach here, so it should be fun. Go ahead and go to the next one.

If you search for “standard deviation,” you get stuff like this, right? Every example that teaches you about standard deviation shows a bell curve or normal distribution as you see here in these Google Search results. Can you go to the next slide please, Ozan? Again to the next one. One more.

These are actual latency distributions from RIPE Atlas measurements, and I presented some of these I think in April.

FRED BAKER:

So, these are Poisson distributions?

LARS-JOHAN LIMAN:

Perhaps. I don't know. Some of them are I would say might be Poisson or Poisson-like. Some of them defy ... they have multiple humps and things like that.

UNIDENTIFIED MALE:

Just one thing, it's very different to say it looks like from the shape than it is, and I'm not sure we really want to go in it is.

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LARS-JOHAN LIMAN:

I do not. I don't want to go there. So, go ahead and go to the next one. What I would argue is that – oh actually, getting ahead of myself. This is just again one of those same graphs, full screen. Go ahead to the next one.

This is that same graph with a few things overlaid on it. I apologize the fonts are kind of small but the blue line show where the median of this distribution is and the purple vertical lines shows where the mean is and the purple horizontal line shows the range of one standard deviation from the mean. So you can see that in this case, the range is extends beyond zero, so you get into a negative range of precision, which is kind of weird. Go to the next one please.

What I'm advocating for in the document is that percentiles are more appropriate ways to express precision and range. Here we have again the median in blue and the 25<sup>th</sup> percentile and the 75<sup>th</sup> percentile on the left and on the right.

This is for one root server for one particular day. I think the next graph shows a different server on the same day, but again shows the ranges.

Here's another example. This is that one with two humps and you can see that the 75<sup>th</sup> percentile in particular is pushed way over to the right. Yes?

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UNIDENTIFIED MALE: What's on the Y axis? Is it number of queries with the given latency or –

LARS-JOHAN LIMAN: Yes. Essentially this is a histogram. There are intentionally no values on the Y axis because when I was making these, I wanted the peak to be at the maximum. But it's essentially count or a fraction of queries having a particular latency.

These are graphs for single days of a single operator. And then I think the rest of this that I have here are just – could you go to the next slide – I think they're just for each operator – this is actually over the course of the year. I think it's 2018. So, I've overlaid again these three things. I think the colors are mixed up now, but the green here is the median or the 50<sup>th</sup> percentile, then the red is the 25<sup>th</sup> percentile, the blue is the 75<sup>th</sup> percentile, and the purple – the really noisy one – is the standard deviation. So this is how it looks over a long period of time. I think here that again standard deviation is not good because it is so noisy. It varies from day to day, from week to week, whatever. Whereas, these percentiles tend to be much more stable.

Ozan, you can just sort of slowly scroll to the rest of them. I think there's one for each letter. In some cases, the standard deviation

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is way up high, in others, it's way down low. I think it's just not a good measurement of precision for these purposes.

In fact, when we finalize some of the metrics in the way that they are being reported, we don't have to necessarily stick to say 25<sup>th</sup> and 75<sup>th</sup> percentile. We could have 10, 20, 30. We could have as many numbers as we want, really. There's lots of flexibility there to present this however we want, but I would definitely argue that percentiles are the way to go. That's basically it.

RUSS MUNDY:

Yeah. This is Russ. Duane convinced me fairly quickly that this was a preferred way to go. One of the other things that I don't think you mentioned here is as we look at how we determine the RSS as a whole is mathematically combining the existing RSOs and at least it appears to me that the standard deviation approach would be even more erratic and very hard to see meaningful results, where a percentile gives – when you look at it for the system as a whole, I think it gives you a more realistic view of what's actually going on in the system. So, the one small piece gives you some variations but when you put a bunch of them together, it would I think smooth out to a more accurate thing for the system as a whole as opposed to standard deviation being extremely sawtooth.

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UNIDENTIFIED MALE: Um, yeah. I think what the percentile provided is a way to represent the curves and the data we've measured. I don't need to be convinced that's the way to represent, but it provides less information than the curves but when you have multiple ones, it's easier to ... so it has an advantage. But if we want to combine the measurement from multiple RSO into one, I would not combine the percentile – I mean making some operations from the percentile representations, but go back to the measured data, aggregate those and then have a new representation.

LARS-JOHAN LIMAN: Yeah. That is definitely the plan. Yeah, absolutely.

WES HARDAKER: I think percentiles are the more modern way of measuring this. I think you're spot on, Duane. The only question that I have is, in order to define a metric of some kind, we have to determine why we're doing it. What is it that we're trying to measure? What it is that we hoped to get out the analysis? And for me, it has always been the width of variations, so that width changing over time where you are getting less precise with your mean. The mean may stay the same but the width is significantly bigger, the mean or median, either one. I don't think that we have a specific defined goal, right? This is us wanting to record this, knowing

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that it'll be useful at some point but not with a specific metric in mind.

LARS-JOHAN LIMAN: Yeah. We were talking about this yesterday in preparation for our meetings and I think that this is something that we struggle within the work party. I think we maybe wanted these metrics to serve two purposes. One is that you say informational, historical performance but also at the same time maybe [as lead] metrics or something like that. That's kind of more the discussion I want to save for tomorrow but I think we do have to address that.

UNIDENTIFIED MALE: When I look at percentiles, I definitely agree as well. I don't want to exclude from the analysis the idea of regions, so if one particular region is always in that top 25%, that's an important factor that we need to consider.

LARS-JOHAN LIMAN: Do you mean the geographical region?

UNIDENTIFIED MALE: Yeah.

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LARS-JOHAN LIMAN: Can you expound on that a little bit to make sure I understand.

UNIDENTIFIED MALE: Let's say it was Africa that is maybe underserved and it's always in the worst 25%. Our numbers could still really look good overall, but it's pretty bad. So, just needs to make sure that we account for – we look at these things and account for regions as well.

LARS-JOHAN LIMAN: So, that sounds to me like something that would be sort of new into the work party document. There are not currently any metrics or we're not proposing any reports that break it down by region. If we should then that's something we could do, but we're not currently proposing that.

UNIDENTIFIED MALE: I think it's important overall but maybe it's not within the scope of this work right now.

BRAD VERD: Sorry to disagree, but I think this goes back to the two work parties that I've talked to about anycast that have been shelved for lack of interest and lack of work. That to me would've been a direct output from those work parties.

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UNIDENTIFIED MALE: I think to some degree, we can account for this by the location and number of probes. As long as they're distributed evenly to portions like Africa, that will cover this.

UNIDENTIFIED MALE: One point I'd like to raise is that if we have the measurements, we're just talking about a different representation because we can split the measurements from regions and have the same way to represent the data but per region instead of globally. But one thing is that if we only have global measurements, it implicitly means that we assume all geographic regions are served in an equivalent way. Otherwise, we're mixing many information into one and it's like a fruit salad of things we don't really know what is missing, what is wrong. So it makes interpretation harder at the end. So I'm not sure it's serving to have only one number. It's easier to have one number. If one number says it's good, we're all happy with that, but if one number says ... it's not as we would like it to be then we don't really know what's the reason and how to analyze that.



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LARS-JOHAN LIMAN: Again, this is not fully addressed by the work party, although I do think we've talked about it a little bit already. I would say we don't really know yet.

So the work party is defining how to do a measurement and how to take those measurements and then calculate a metric. But for example, the work party hasn't really been tasked with saying these measurements must be collected and published somehow or made available to some parties. It's not clear to me, for example, that the raw measurements are going to be made available to just anyone who wants to see them. So if that is true, if the raw measurements are not going to be made available then it is important to get this right. If the raw measurements are available then of course people can do their own analysis if they want to analyze it, however. I guess to the extent that we haven't settled on that, maybe we need some discussion around that or the work party needs to think if it should say something about publication of raw data or how raw data is handled.

BRAD VERD: I think we need to be careful as to not engineer a monitoring system and put requirements to build a massive monitoring system. I'm trying to think of how to word this. I think having the discussion around geographic diversity, you start talking about

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Africa or China or any other region, or Tuvalu. It's a very slippery slope. And all of a sudden you're having a conversation where you have probes at every endpoint of the Internet, and I think that is not a reasonable discussion nor is it achievable. So I think you've got to identify – my thought processes like largest peering points, top ten largest peering points on the Internet, test your probes, done, go forward. Then in your documents, you state that “We should reevaluate this after a year or two and see if we should change them or remove them or whatever.” There should be an opportunity to change that at a later date.

There's always going to be an exception where somebody is not going to fall into 100 millisecond or less response time or have a latency issue, and there's nothing we're going to be able to do to address that, much less monitor it. So I feel we just need to be careful of those conversations and I don't believe putting a requirement out there to build a system. We just need to be cognizant of what we're asking for.

LARS-JOHAN LIMAN:

Ozan, could you put up the Google Document that the work party is working on? Do you have that? Oh, sorry.

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BRAD VERD: Go ahead with that but while you're doing that – so you asked standard deviation versus percentile. Have we answered it? Who do we need to answer?

LARS-JOHAN LIMAN: May I? The people that spoke up. I heard everyone supporting the percentiles, and that's kind of what's written in the document now. The reason I specifically brought this up is because when we met in April at the workshop, standard deviation was the talk of the room at that time. So, yeah.

BRAD VERD: Alright, so you've gotten your answer and what you need there?

LARS-JOHAN LIMAN: Yeah, I feel pretty comfortable with that. Yeah.

BRAD VERD: Okay, great.

LARS-JOHAN LIMAN: So I've asked Ozan to put this document up. Yeah, thanks. I want to scroll down to the BPQ section I guess. Again, since we have time, this is something that often gets neglected so I think we should talk about it a little bit.

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At the workshop in April, we talked about this. We settled on the idea that the work party could provide sort of an algorithm for calculating BPQ of the current traffic levels. Does everyone remember that or agree with me that that's what we discussed?

The text in the document now basically I think it's pretty straightforward but it proposes that somebody – maybe even the work party – develops these algorithms or even just formulas by using – we can take packet captures, for example, from dittle data or essentially something like that. Packet captures the order of hours or days. It's pretty straightforward to have software that just runs through those packet captures, tallies up how many UDP queries there were, how many TCP queries there were, how many packets there that were involved in TCP queries and then essentially outputs the simple relationships between those counts and the bandwidth and things like that. So if you have that then you can just apply then reverse. So you can then take any days worth of RSSAC002 data which has counts of UDP queries, counts of TCP queries, and apply to reverse and then you can get to the bandwidth that generated that much traffic.

To me that's a pretty easy thing that we can do. It's pretty straightforward. It's a kind of thing that you would probably want to again revise from time to time. As traffic changes over time, you may want to rerun these processes and update the relations between these two numbers. But to me, it seems pretty

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straightforward and obvious. I'm not sure that I've explained it especially well though.

UNIDENTIFIED MALE: I think the question was, what would be the allowed maximum value?

LARS-JOHAN LIMAN: I think that has been a question at some point in the past but that's a very hard question and something that I think we're not really willing to –

BRAD VERD: I'm sorry, what's the question?

UNIDENTIFIED MALE: My understanding of the comments from the Board to this BPQ, they want to say how resilient the system is to this type of attack – this type. So, basically, what is the limit of the system?

BRAD VERD: No, I've never heard that question and I would never answer that question. Just very clearly, I think we've all stated that numerous times that you're not going to provide the maximum

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number for somebody back engineering to how to take the system down.

I think what they're looking for is a cost. I think what we provided was that if you could put together your BPQ and use business practices to come up with a cost to that, you could then take the RSSAC metrics and define what that cost is today. But then, to be very clear, we said this in our document, we said this in executive summary because I just gave it to the GAC, is there's a multiplier in there which is the risk, and what is the level of risk that the Board is willing to accept. Because there is no answer to the question of "How resilient are you against this attack?" There's so many different types of attacks and there's so many different variable involved in the network. There's just no way to answer that question. So it's a level of risk that the Board has to be able to address. So if this is our effort here, we can give them the first part of that equation. The second part is up to them.

UNIDENTIFIED MALE:

Just to echo what Brad said, that's exactly what was communicated also to the Board. That's how we wanted to basically shift that risk and let them decide on where they feel comfortable.

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LARS-JOHAN LIMAN: What we've got here in the work party document is basically you take a peek at file and that's your ground truth. You know everything. You know the traffic the number of packets that came in. You know the bandwidth, the counts. You use that ground truth to then calculate the relationships and then you can use those relationships given the RSSAC2 data to get back to bandwidth for any day.

Since RSSAC002 data is published on a daily basis and going back in time, we can apply these formulas to that data. Whoever wants to do the math can calculate the load of the current system and then they can do their extrapolations for capacity planning and cost planning and risks and all that.

BRAD VERD: Just for clarification, as long as you in the document somewhere state how you came up with those figures and that those are subjective figures, meaning they are figures for this day and they should be reviewed on a periodic basis and whatnot, then I think that's the best approach. It's going to be impossible coming up with the right number.

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LARS-JOHAN LIMAN: Yeah, I wasn't sure if the document should actually include the figures or just the method of how to get the figures. I think the method would be sufficient and that it's not sort of set in stone.

Alright, I'm running out of things to talk about before tomorrow. Russ, do you have anything to add to BPQ? Put you on the spot.

RUSS MUNDY: Thinking about the BPQ – that has been a challenge especially just trying to think through what the mathematics would be to do the BPQ for the RSS. I think it's doable but if what we are documenting is the mechanisms and process about how to get it all written down then yeah, that seems like a good way to go for here.

BRAD VERD: I think the intent was, is there a better way. I don't remember what the work party charter said but I think it was try to work with what we have and if that's not it, is there something better?

RUSS MUNDY: As I tried to get brains around "Is there a better way?" originally the BPQ was created as a way to costing information or some basis for costing information for an individual RSO activity. And then extending that usage, that idea of it to the RSS as a whole,



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that was where I was really trying to figure out this is a rational way to do it. And I think it is a way to do it. I don't have a better way but I think once we actually get it pulled together, we'll see if it is reasonable and useful or not. I'm still not fully convinced that for the RSS as a whole, this will produce a useful result for us, but I don't have a better way at this point. Take it from the individual RSS to the whole.

UNIDENTIFIED MALE:

Just as a reminder, actually when we developed this, we actually developed it only for the RSS. When we talked about this, it was two or three workshops ago in D.C., we developed it only for RSS. And actually, we advised – I think if you look at the actual text – we said we shouldn't use it for RSOs. We decided that we want this for the whole RSS. So it's exactly reverse of what you're saying.

RUSS MUNDY:

Okay. I guess I'll have to go back and look at it. I remembered it is exactly the inverse. What is involved and how do we develop a measure to stand up or continue to operate a given RSO?

UNIDENTIFIED MALE:

Just to recap the whole process, basically, in that workshop, we had a contact with Cherine and we said we're almost ready to

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submit. But the main question was what about the costing and financing. For costing, if you remember, we actually even had some ideas about FTEs and how many people but we figured out at some point that's not going to work. So we said for the whole system, because the problem the Board had – and I think it still has – is the possible scenario that let's say the root server system goes down and then someone picks up the phone let's say from wherever, from Congress, and then says, "Hey, you guys rightly/wrongly but that's their perception. You guys are in charge of this DNS – the stability of the DNS and what have you done to make sure this doesn't happen or show us you have done your due diligence." And there's nothing to show at the moment today.

These are the two background parts. In that workshop we came up with measure as something that RSS can do as a measure for the performance of whole RSS, not any individual RSO. Then the idea is we tell them, "Okay, the normal operations, this is basically the BPQ for the RSS." If you want 10 times more than that, of course, then you can actually cost it well and we can plan and the strategy function can actually say, "We need five more operators to be able to achieve that." That's the whole story behind that. It was never about RSOs.

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LARS-JOHAN LIMAN: Well, that sure complicates things. We've struggled with this BPQ for a long time and this was the only way that we found forward. I guess if we are going to limit ourselves to what you just described then I don't see how we have a way forward.

UNIDENTIFIED MALE: I'm not suggesting we limit ourselves to that and we don't use it for RSOs possibly, but I'm just saying the general idea and the main use for costing for the Board would be for the RSS. It can be used for other measures of course. That's why we came up with the idea and why developed it for that specifically. Of course, it can be applied to other places for a good reason.

LARS-JOHAN LIMAN: Yeah. I think the difficulty that I would see is assuming we proceed along these lines and we publish some relationship between RSSAC002 data and BPQ then of course anyone can take that method in and apply it to the public data and they can do the math themselves. It's very straightforward. That's probably the complication we face.

UNIDENTIFIED MALE: I think in that case, the question would be can they actually get data from 002, sum it up, and then apply the same for it because

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someone can argue that the sum does not represent the whole of the system.

LARS-JOHAN LIMAN: Well, I'm not sure I follow because, again, what we're proposing here is a way to calculate the load for a particular day or today, right? If you're saying that summing up the load of the individual doesn't equal the load of the whole then I'm not sure that makes sense.

UNIDENTIFIED MALE: I'm not saying it doesn't. I'm saying that we might need to make a statement that this is how we see it and if you want, that's how we calculate. So like document that summing up means the total because there are ways to argue that it's not. I think we can go both ways but I think it doesn't matter. If we say that's how we see it, that's fine. But we have to state it.

LARS-JOHAN LIMAN: Okay, alright. Thanks.

UNIDENTIFIED MALE: Just a question. The RSSAC002 – are they daily published?

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BRAD VERD:

I fear this might consume more time than desired. The BPQ piece on the charter was nice to have I think. Clearly the metrics are what's most important. If figuring out this math as you stated earlier is pretty simple, just to figure out the math and the equation, I think maybe we spend some time on that, pull the math together, and then we can sit down and walk through it and see if it's applicable. My guess is you're going to end up with a bunch of assumptions that you're going to have to clearly state.

If you take the aggregate of RSSAC002 data, plug it into your equations, spits out a number on what the cost is, then you're going to divide that by let's say 13 for each identity, and then some multiplier of risk. So I start to put it out my head, I can see where it become – there's a bunch of assumptions are made along the way that maybe will become more apparent as we just do it. Or maybe as we just start to work through it, you just said, "This is just not working."

LARS-JOHAN LIMAN:

Yeah, I think that's a fair point. If we have the method and if we apply it, we can play it for days and days and days and days, and we can see how things vary from day to day. I think we also need to validate our calculations, so the idea is that you take an RSSAC002 dataset, apply the math and you get some number.

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Basically, you get a bandwidth number. So we can ask people to say, “Do we get it right? Does this actually match your bandwidth for that day or whatever? Check our calculations.” I think this is all straightforward. For me, I’m more concerned about the [inaudible] stuff that we were just talking about.

The math part is easy. The hard part is going to be what Kaveh was just talking about. Is the approach right? Are we applying the calculations in the right way? Are we providing useful data to the Board or whoever is making the decisions? Is it appropriate –

BRAD VERD:

I don’t think we’ll know that until we start playing with the numbers to see if it’s somewhere in the ballpark of reality. If it’s not then we either adjust the formula or we just say, “This is just not working,” and throw it away.

I don’t want – how do I say this? Again, the charter was given to the work party. If they want to change the charter, you guys are empowered to do so. I hear a lot of discussions of certain words that have become lore I guess, and I just want to make sure that that’s not necessarily driving the work party. That’s all.

LARS-JOHAN LIMAN:

I’m trying to think of what we can still talk about today without the whole caucus here. I’m kind of running out of ideas. I don’t

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know. We can stop or I can give a little teaser for tomorrow and try to restrain ourselves, but we really do need to have the full discussion with the caucus I think.

FRED BAKER: It's okay with me if you want to stop. It's up to you.

WES HARDAKER: I would agree. The caucus was expected to participate in this in having underrepresentation is not really fair.

FRED BAKER: Okay. Then my suggestion is – Carlos says that he has the updated public comment. Let's talk about that, throw darts at it, and call this one a day.

CARLOS REYES: I added the highlighted text. Hopefully this addresses the points from the discussion earlier.

FRED BAKER: Does anybody have some heartburn with this? All in favor hum. Those opposed hum. Okay, I don't hear any humming. Then fine. We'll go ahead and file this as an RSSAC comment in that public comment and go from there.

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UNIDENTIFIED MALE: [Inaudible].

FRED BAKER: Only if we hum. Okay. Thank you much. I think the next thing we've got is actually the policy aspects of DoH and such, which is not an RSSAC meeting.

UNIDENTIFIED MALE: Does anybody know what the room is?

FRED BAKER: The room is Cristal. It's where the GAC is.

UNIDENTIFIED MALE: Is that –

UNIDENTIFIED MALE: The Palace.

UNIDENTIFIED MALE: Original hotel?

UNIDENTIFIED MALE: Yes.



**[END OF TRANSCRIPTION]**