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MARRAKECH – Identifier Technologies Health Indicators  
Wednesday, March 09, 2016 – 17:15 to 18:30 WET  
ICANN55 | Marrakech, Morocco

UNIDENTIFIED MALE: This is the Identifier Technologies Health Indicators on March 9th 2016 from 5:15 PM to 6:30 PM in the Atlas room.

DAVID CONRAD: This is David Conrad, the CTO of ICANN. This is the Identifier Technologies Health Indicators Session. I actually said it right this time. We'll be starting in just a couple of minutes. The previous session ran a little over because they started half an hour late, so we'll start in about two minutes. Thank you.

UNIDENTIFIED MALE: Good afternoon. We are going to start this session. I apologize for the delay. We have a very big room, so I will encourage people to move toward the front.

Today, we're going to talk about a new initiative at ICANN called the Identifier Technology Health Indicator or in short, ITHI. It's a bit of a long word to pronounce, but hopefully, we'll get used to that. This is a kick-off meeting, so this is not something that has

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been really thought for a long time by ICANN and tries to dump it on you. This is a new initiative we're just starting now.

We would like to get some input from the community on what to do and how to do things in that space. We have had some preliminary thoughts, but we want to put on the table here as just a straw man proposal. But again, this is not something that's cast in stone. We would like to get input and try to move forward on this.

There have been some previous efforts done by ICANN around health. SSR at [inaudible] Symposium, and we had a study on DNS health back in 2010. There was a report that was published – still available online – about measuring the health in the domain name system. So this is, if you like, some kind of a continuation and generalization of this effort trying to expand the scope to what is the scope that ICANN deals with.

If you look at the 2009 Affirmation of Commitment, the purpose of Internet domain name and addressing system, DNS, is identified as domain names, Internet protocol addresses, and [inaudible] system numbers, protocol port and parameter numbers. ICANN coordinates with identifier at the overall level consistent with its mission. So that's part of the Affirmation of Commitment. That will be the essential framework within we

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will operate here and try to look at all the identifiers that ICANN helps to coordinate.

If we look at the mission of ICANN, there's a current mission statement and what will be the post-transition mission statement. You have the text here. What is important to look at this is to ensure the stable and secure operation of the Internet unique identifier system, and if we want to look at something that is and say if it is stable and secure, we first have to look at this and to measure it and do some research on this.

We cannot simply declare, "Oh. Today, the wind is blowing in this direction, so it's safe and secure." No. We have to have a scientific approach and to agree on what we are going to measure and keep measuring this over time, so we can see the evolution of this.

More simply was the ICANN Strategy Plan for 2016 to 2010. That has been approved, and section 2.1 of the strategy plan talks about to foster and coordinate a healthy, secure, stable, and resilient identifier ecosystem. So that really is the framework here. That's why we're looking at health.

In this statement, you will see a new area. This is talking about the unique identifier ecosystem. So this is to be taken as it's not just names. It's about the root zone, the Internet number of

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registries, protocol parameter registries, operation of the L-root, and etcetera.

So it's relatively large. It's not unbounded. We are not going to look at anything that is completely outside of the mission of ICANN. This is really bounded by the mission of ICANN on all the different unique identifiers that ICANN helps coordinate. This strategy plan talks about the different risks, and this is what we need to keep in mind when we look at health, trying to look at things that fall into those categories of risk.

So there are issues about potential failure of a DNS root name system, fragmentation of the Internet because of IPV-4/IPV-6, confusions of wide-system failure due to widespread and otherwise re-use of allocated IPV-4 addresses. All this is from the strategy plan, so that is what we want to use as guidance into this new initiative.

So now that I have somewhat framed the context, try to look at what is health. Defining health is really, really hard. Even in our group, in the city office, we had some brainstorming and said, "Okay, so what is health?" All of us came from very different angles on this. We don't really agree on this thing.

If we look at the 2010 SSR Report that I was mentioning earlier, it said that there was no consensus on what precise set of

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parameters to define a healthy DNS. Because at the end of the day, the notion of what is health is still a little fuzzy.

But we have some help from a recent document from SSAC, SSAC-077. It essentially says that if you want to look at health in that type of environment, simply looking at random metrics and looking at the data that you have and try from that to extrapolate what is health, is not the best way to look at this. It's quite the opposite.

SSAC recommends that we first look into the space and understand what the problems are, and then go find the data to measure what you're trying to measure. So, they mentioned that the data may or may not exist, and that's okay. We may have to create a new program to go and get this data or to find all the people who may already have this data and then collect them.

So that is the approach that we would like to take here. It is to first look at the space, start as SSAC says with insight into the ecosystem, and then drill down into what metrics best convey that insight. That will be our approach, or at least, the approach we think we would like to put as a straw man proposal here, and we will welcome comments on that particular approach of course.

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So work into, as I said, make some straw man proposal here, and this is really the beginning. We are looking for input. I've said that already at the beginning, and I'm going to say that again. This is not something we want to do in an ivory tower. We want to engage the community on this, so thank you very much for being here today.

We are going to present some very preliminary thoughts. As we want to start the discussion, it's best to have something on the table rather than have absolutely nothing. We want you to look at what could be a healthy system, and sometimes looking at what a healthy system is is difficult, so we may look at what an unhealthy system will be, and just take the negative of that, and that may be a simpler approach.

So let's apply to the different set of identifiers that ICANN helps to coordinate. First, let's look at the root server system.

Well, one idea that we'd like to put on the table is to establish some service level observation. So it's not service level agreement. There's no contract. There's no service level expectation. It's not something that we expect, but it's observations, things that we can measure.

We can send a bunch of queries from various places in the universe to the root – well-formed queries, not bogus queries –

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and look at how well they are resolved and how fast they are resolved, and that could establish a baseline for a certain observation point. That's very different from an expectation or an agreement. We would like to work with the various groups of operators and RSAC to go and dig into this a little bit further.

Another angle that we can look at is the administrative side of it – not just the technical network [inaudible] – but the administrative side when there is an update to the root zone. When IANA has some SLAs to update the root zone, then we can see how well those SLAs are matched, and that could be an indicator.

We could look also at new technologies that are being introduced and how fast are they supported into the root server systems. For example, the last 10, 15 years, we had IPV-6, we had DNSSEC, and at some point, they got supported by the root server system. There might be some new technology coming, and it might be interesting to look at how fast they will get in there.

So the second bullet is essentially the same thing. But looking at it from the other angle, by examining the queries to the root, we can look at various flags that are in the packet and see, “Oh. This is an indication that somebody's trying to use this new technology,” and maybe that could give us an indication that,

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yeah, this new technology is picking up because we seem more and more of those queries.

Again, this is a straw man proposal. We would like to work with all of you, and in particular with RSAC and the people from the root server operators to come and say that maybe that's not the right indicators. Maybe we can do something instead. Maybe you have some better ideas. We'd like to hear all of that.

Another aspect is what's happening with registrars and registries. As what I was saying, we want to look at health as the opposite of unhealthy, so we want to make sure that it is a robust market. We would like to avoid failures, and there are different types of failure that we have been thinking about.

One could be a technology failure. For example, if there is not enough backend software behind all the registries, and there is a bug or an attack or something that were to issue on the backend registry. If everybody is using the same backend registry, then we may have a problem. So making sure that there is enough of a variety, but maybe not too much of a variety into the backend system is something that could be interesting to measure.

Is there enough choice of registrars per TLD? Same issue. If there is only one registrar on a TLD, it may be the normal thing in some cases. But in other cases, a tougher, more generic



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operation model, that's not necessarily the safest way to operate it. If there's an issue with that particular registrar, then that entire registry has an issue.

Again, this is not necessarily about saying, "We need five or we need three, we need seven," this is about, "We want to measure this." Other people may look at this and say, "Oh, yeah. We had five. It was fine. We are now down to two." We start to see problems. That will not be my job. That will be somebody else's job to go and do this analysis.

That's common to apply also to the previous slide about the root servers and the root server systems is we will do some measurement, but we stop at the research part. If somebody wants to look at this measurement and say, "We want to change the way the root servers operate," that will be a prerogative of the root server operations, certainly not ours.

We're talking about also going back to the TLD industry market, looking at abuse and bridge and some best practices. For example, the DNS is now starting some initiatives on defining some best practice for registries and registrars. That could be an interesting dialog to have on what actually it would be interesting to measure.

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So this is from a market angle, then there is a technology angle to this. We have some key technologies, like IPV-6 and DNSSEC that will be interesting for all registries and registrars to adopt, and this is not the case now. So we would like to go and simply monitor how many registries, how many registrars are supporting those technologies. Again, those are a straw man proposal that we want to put on the table today.

What about IP addresses? Well, there is the beginning of this effort, so we would like to collaborate, and we are looking forward for a collaboration with the IR to identify what those health indicators for the Internet numbers could be. So that's a discussion that we would like to start now, and maybe in the different IR frameworks have some follow up conversation and together go and define this.

Internet protocol parameters, essentially the same proposal, is we would like to work in collaboration with the IETF to define what could be the [inaudible] indicators for the protocol parameters, and that's why it's really important to do all this collaboratively. I think if we are to succeed, if it's only coming from ICANN, it's not going to work. We need to have a community to help us and to own this process.

One word of caveat. If we look at the protocol parameters that are managed by IANA, not all of them comes from the IETF. We

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have a few of them that come from IEEE or CableLabs, so we will have to engage IEEE and CableLabs and all those to also help us define some health indicators for those particular protocol parameters.

So that's essentially the end of my introduction for this session. We are looking for input from you because at the end of the day, this could go to be your project, not just my project. So we have kept the number of presentations very small. There is only one presentation. Mine is already over. We still have a little bit of time, and I will welcome any comments.

We will have start a discussion on the microphone today, and we are going to set up a mailing list very quickly to enable people to participate outside of just this meeting and bring forward more discussion. Please identify yourself when you speak, and I would like to hear from you. I'm going to sit now.

DENISE MICHEL:

Denise Michel with Facebook. Thank you so much for this presentation and for undertaking this project. We were actually just discussing, this week, in the business constituency the need for more transparency and data really across the board, so we're very excited that you're undertaking this. I was really pleased to see that you're creating a comprehensive report, that you'll be

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including all of the unique identifiers for which ICANN is responsible for coordinating, names, numbers, and address, which is great.

A couple questions. Could you give us a sense of the timeline of how and when this will roll out, what the opportunities are, and the timing of input for this? That's my first question.

My second question is particularly in the domain space, there's a whole range of private sector data collection and reporting effort, particularly around malicious abuse. I was curious as to whether you have any plans to reach out and potentially include some of that data as well. Thanks.

UNIDENTIFIED MALE:

To what was your first question, we are starting now. The mailing list is up. It's going to be [ITHI@ICANN](mailto:ITHI@ICANN). We will send the announcement through the different constituencies within ICANN. Didn't want to start the mailing list officially until we had this meeting today.

Now, how fast this is going to go, it's probably going to depend on all of us, and that's why we welcome input. Maybe we can set a goal. Maybe an aggressive goal so that the next technical meeting, then we will have something to fill up all the blanks in here, and maybe have a better understanding of the space, and

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then start having some metrics, and then for one after having some real metrics that we can start. So it's going to take a few months, but hopefully, we'll get there.

Now, about your second question about reaching out to other constituencies, I will be delighted to do so. So if you can help me on this outreach effort, I will be happy to collaborate.

Next question.

DAN YORK:

Sure. Dan York, Internet Society, and you probably know what I'm going to talk about, which would be DNSSEC. But, gee, funny I know.

But actually, first though, interestingly, I know some folks within our technical circles are going to be next week where they're going to talk about some Internet measurement ideas and projects, so can we get this slide deck soon?

UNIDENTIFIED MALE:

I can give it to you tonight.

DAN YORK:

Excellent because I'd like to pass that on to the folks who are going to be involved in that.

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I think to the question over here, too, yes, scope is going to be the big question here and what do you do with that? Very specifically, I would say, there's a number of the measurements that we've been looking to try to do within, what I'll call, the DNSSEC community, the folks who have been working and coming to these DNSSEC workshops here around the adoption of DNSSEC within some of the areas.

Rick Lamb, from your organization, has been maintaining a great statistics site showing the adoption at the second level domains for some period of time now of how many zones are signed within a given domain. There's a number of different factors there that would be interesting to explore more to look at how secure is a DNS system, and some of those are with data that you folks have, that ICANN has, that others do not have, which would be a great way that you could add value to some of the other measurement efforts that are happening out there in providing the access to that information.

Things such as – you mentioned the adoption of new technologies. We just had a session in the DNSSEC workshop today looking at how do we make the migration and the move toward elliptic curve algorithms in signing and validation. Validation is the network operators, and that's not you folks, but the signing side of things is stuff that you could really add some

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value to in showing how much of these algorithms are being adopted and used. I know Ed Lewis did a number of one-off analysis types of things about what was the status at a given point and time. But taking some of that and making it in more of a – perhaps not real-time – but in a more regular reporting format would be outstanding for those of us looking to do that.

Finally, I'll just mention another piece of that would be support by registrars and registries for some of these. We just talked in the session this afternoon, again, about the fact that for rolling out new more secure encryption algorithms within DNSSEC, it's hard to understand how many of the registrars and registries provide support or would provide support for those algorithms, so any mechanism that you could do to do that.

Rick also used to maintain a list – well, it's still up there – of the registrars that supported DNSSEC, and it was woefully always a struggle to keep that up to date. Again, something like that that could help people because we have a challenge when people say, "I want to do this." How do you point them to the people that can do it, which then also might help influence the adoption if people see that they're not on that list?

The final note I'll say is I just got done presenting about the MANRS initiative, the Mutually Agreed Norms Routing Security that is being worked on within the routing community with the

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ASN numbers, and I know that that community is talking about how do you measure the adoption and effectiveness of some of these measures that are there. I don't quite honestly know about how it might connect with this, but I'm just flagging that it might be interesting to get those people talking together as a way to potentially do that.

UNIDENTIFIED MALE:

Thank you for the comment. One quick response is what we intend to do is to collect this data, and to much of this data almost real time. It might be once a week or once a month, once every quarter. We're not quite sure. That's something that we need to discuss as a community. What is the granularity of a measurement, and once we have established a baseline, I think tracking this data for a long period of time, so it's not a one off or a two off, but it goes on on many years.

DAN YORK:

Well, at every one of these ICANN meetings, I stand up at the beginning of the DNSSEC workshop and present the DNSSEC deployment maps, and right now, I also have some slides presenting some other ones. Those kind of metrics help us as a community understand where we are on moving toward a more



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secure and trusted DNS environment, so any kind of metrics – dashboards, charts, pretty pictures – that’s all awesome.

UNIDENTIFIED MALE: Thank you.

JAY DALEY: Jay Daley from .nz. So, much of what you're talking about is quite new and quite technical, but there’s one element of it that isn’t so much and that intersects with market regulation, and that’s when you start talking about the number of registrars that cover a TLD because you can naturally extend that to if there is dominance within that TLD by some particular registrars or others, and that’s a well-defined field. There are indicators like the Herfindahl-Hirschman Index that we use, for example, to measure market concentration and things.

So I think some more thought needs to be put into that area because it clearly goes to another bit of ICANN, rather than the three of you, and has a different tone. That’s it. Thanks.

DAVID CONRAD: One thing. There’s another initiative going on in a different group, the GDD group, on the domain marketplace health indicator. And I know they’re already looking at the indicator

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that you had described. We see that as a subset. We actually have no compunction to steal other people's data. We see this project as more as a clearinghouse of data that other people collect. We'll do some ourselves. There's some data that we have a unique view into, but we're looking to find essentially partners, and collaborators, and others whose data that we can rely on over periods of time so that we can track the changes in data to see if things are getting better or worse.

So yeah, there is this other initiative. There are other pointers to other entities that are collecting data that is tracking in some way the Internet system of unique identifiers, then we would be very interested in exploring that.

UNIDENTIFIED MALE: Just to answer quickly to your question about the HHI.

JAY DALEY: Herfindahl-Hirschman Index.

UNIDENTIFIED MALE: Thank you. This is something of interest, one of the questions that I have – and I will look for input from the communities when we drill for each of those categories – is where is it applicable, and where is it not applicable. There are cases where it's fairly

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straight forward, and other cases where it is more questionable. And having input from the community and where it makes sense to use it will be really good.

JAY DALEY:

I think my point is that I don't think you should be going there. I think that should be done by a group that is more commercially focused and more market regulation focused. If you're going to calculate HHI properly, you need to know the structure of registrars to something if there is shared ownership behind them, for example, because you're looking at, affectively, at the threat of financial loss or the threat of risk from the loss of a single financial entity, and so you need to understand corporate structure. I would suggest that that's something that's not necessarily in scope for this group here, but it's your choice.

One other point, though, I think that it's useful to perhaps take a step back and look at an overall balance score card and look at what are the top level areas that need to come into it, pick four or five of those or get those, and then understand then what goes beyond those and what goes down, [inaudible] perhaps so much with a bottom up process.

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UNIDENTIFIED MALE: So if I understand correctly, you would like to get the discussion started on identifying first what are the first top four or five areas that we need to drill into?

JAY DALEY: Yes, [inaudible].

UNIDENTIFIED MALE: Okay, good. Good point. Thank you.

JARI ARKKO: Jari Arkko, Erickson and IETF, although, I'm speaking with my own opinion here now. I had a couple of comments. I think this is interesting work, and thank you for thinking about this. I had some comment relating to how to frame it or think about it or how to go about it and what the scope might actually be usefully.

I guess the first comment is that there's a lot of work in the world around Internet measurement of this or that kind, and it might be a useful thing to think of this as a project within that kind of community. There's lots of groups that are talking about Internet measurements, IETF and elsewhere, in the research community and so on and so forth. So linking this into that might be a useful thing because I'm going to argue, in a

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moment, that there is quite a lot of linkage between the health of the identifiers and the health of the other stuff or technology, for instance, in the Internet.

The other comment is that I feel a little bit like I'd be in an IETF BOF meeting with slides but no draft. Some of the things that you are saying here are very attractive, but I'd actually need to have a document, and I'd need to go through – not necessarily me, but other people – look into that whether that's a feasible approach and what the details are because the devil is in the details, and some of the things are actually somewhat challenging.

That's actually my third comment, and that's about the scope. You've chosen to call this the health. I know it's a catchy title, but it's a very ambitious definition in many ways. You're basically assigning value to how well things work. I think that actually goes very much into what the RIRs or the IETFs or other places and actually what their bread and butter is. They're thinking about how well does the Internet address allocation system work, and what does good look like for that.

Take an example of the protocol parameters. Is it a good thing that there is lots of allocations and port numbers, or is it a bad thing? We don't know, and it depends on things like where the technology is developing. Everybody's doing things on top of

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http, then the allocations look very different from if they are creating separate protocols, but it's very much a judgment question at the technology level whether that's a good or bad thing.

So this might actually be something for the real health question. You really have to do this, and let's say, at the RIRs or IETF or [inaudible] research organization. But that is not to say that you couldn't measure many useful things. What fraction of the market on a particular angle supports IPv6? How people support DNSSEC and what features? There's lots of good things, lots of information, lots of data that we all would love to get more from the Internet, so I think focusing on that, getting that data would be a good thing. But health is a little bit of an, in my mind, over-ambitious goal. Thank you.

DAVID CONRAD:

A couple of comments. The use of the term health was actually derived out of the strategic plan that this sort of follows through from, and so my understanding is it happened before I re-joined ICANN. The strategic plan was developed through a community bottom up process, and they are the ones who came up with the term health. But I take your point.

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One of the discussions that we've had is that our interest is in collecting the data and making that data available in a purely objective, non-judgmental way. We would not make any of the judgement. We don't do the policy. We're just collecting the data and trying to determine the trends.

The thought that we had had is that you have a whole bunch of trend lines. In Star Trek you had the health monitors, and then everything was going like that, and if, all of a sudden, it goes like that, then you know something has happened. You don't know if it's good or bad, but it does indicate to you that you need to go and look to maybe see what actually has happened. And it wouldn't necessarily be ICANN that would look, it would be people who care about whatever that particular data set is that's trending differently.

I know that the last time I worked at ICANN, I ran IANA, and we had this experience where one protocol parameter registry – the trip identifiers – was essentially dead. Maybe once every year or two, there would be an allocation, and then pretty much overnight, it spiked to 10 to 100 requests a week.

Initially, we had no idea what was going on. Eventually, we figured out it was because someone had determined that that would be a good identifier for use in a voice over IP phone network and was bypassing the normal way of getting identifiers

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that way. But that was in the protocol parameter space, for example. We wouldn't make a determination. We wouldn't even know what it meant that you got this spike, but it would be something to actually be useful to track for others like, say, the IETF to say, "Oh. Maybe that's not the right use for that protocol parameter."

JARI ARKKO:

Right, and I think we actually do track a lot of that. I'm sure we could add to that usefully, but some of that is already going on. Thank you.

DAN YORK:

Dan York with Internet Society. Just two thoughts.

One, trend lines are awesome, so yes, anything that you can do with that. Jeff Houston, sitting back there, has been maintaining his trend lines on DNSSEC validation and on IPv6 and things like that. Those are awesome because they help those of us who are advocates for it to provide that.

But having said that, I want to build on something Jari said in there, too. A criteria for me would be to think carefully about what metrics you are exposing because I could easily see this becoming the proverbial rat hole where let's go and expose



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everything because it's all great and we can do it and woohoo. We can make this there. My driving thinking around some of these is when I look at a chart, I usually apply the so what metric to it. What does it mean? So what? Why is this important to expose?

I guess I would really encourage you because, David, when you say, we're going to put the data up there and leave it to others to determine that, I think that's great, but I would encourage you to think about what data you are exposing based on that question of does this really matter? What can this do? How could this be used by others? The so what question.

UNIDENTIFIED MALE: So to answer the so what question, I would refer back to the SSAC-077 document where they say, "There is essentially a difference between correlation and causality." So that's why we would like to have a discussion about the causality first, so we don't fall into the correlation trap. Yes.

UNIDENTIFIED FEMALE: I only have one question in the chat room. Do you want me to go ahead?

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The question is from Lucienne [inaudible] from Banqui Central African Republic. The question is: “Can ICANN help our government to introduce new technologies into health? Because we are late?”

UNIDENTIFIED MALE: Yeah, I think it is a little irrelevant to the topic because he is talking about e-health. But this is about Internet identifier health, so probably this is not the right forum for that question, and it is not even within the remit of ICANN. I will say it like that, but if you can get his contact, then we can engage him precisely on that.

DENISE MICHEL: Denise Michel with Facebook. Following up on the previous conversation, I think many in the business community would find it really useful if this served as an aggregation of critical indicators. We’d be fine with some repetition. I think it’s great that you’re really looking to collaborate and coordinate with IETF, and RIRs, and APWG, and other relevant entities. It’s very difficult, I think, for a lot of members in the community to go to many, many sources to get a clear sense of help with the indicators quite broadly. So I would be supportive of it being

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comprehensive and starting larger and get feedback and continue to evolve the index.

I have a question. In late January, there was an announcement of a couple of community conference calls and a questionnaire about DNS abuse. I'd be interested in whether and how that is correlated to your efforts.

DAVID CONRAD:

One of the most interesting of the metrics that if you're looking at a health indicator model – and from ICANN's perspective looking at the health of the DNS and the health of the new gTLD program – for example, would be, at least in my mind, the amount of abuse that is impacting the domain names that are being allocated. So that is clearly one of the most interesting indicators that we're going to be pursuing.

We've already, in fact, even before doing this kick off, that has been identified as a specific area of interest for the other group that's within the office of the CTO as opposed to research, who [Alon] works for. The other group is the SSR Group, the Security Stability Resiliency Group. They are already in the process of developing mechanisms to try to attract DNS abuse that we have been working on obtaining a number of different data feeds and trying to aggregate the information so that we can get

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a picture internally of the health of that ecosystem, and that's an area that we're planning on being fairly aggressive with in terms of deploying various metrics and indicators.

ANGIE GRAVES:

Hi, this is Angie Graves with WEB Group. I belong to the business constituency, but I'm speaking on my own behalf.

I like what you said about working from the inside out, and mirroring that also, David, understanding what the community is saying about potential problems that exist today is very important as well as not being too ambitious. The credibility over this over a long period of time is important. I would hate for there to be a gaping hole that people pierce through and damage this for the long term because it is important.

Mirroring what someone else already said, really would like the opportunity to formally provide comments and responses. I've noticed a couple of things in the slide show, which is great, but that I would like to comment on but in a more formal way and maybe written. So thank you. If you're able to invite more community input on this on a written or e-mail exchange basis would be great.

Then, having a well-defined scope. I appreciate all of the writing about what the delineation of this is, acknowledge that the

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community is seeing the word health in a lot of different places, the word index, the word DNS, some things that might, even though, this is distinct, might cause a little bit of confusion in people's minds if it's really drawn out where it's not that specifically in relation to some of these other efforts, it might be beneficial. Thank you.

UNIDENTIFIED MALE: Let me ask you a question to your comment. I'm not sure I understand. Are you suggesting that we use a different name than health, and if so, which one?

ANGIE GRAVES: I'm not suggesting a different name. But there are certain words that are floating around the community right now with a lot of attention drawn to them. Health is one of the words used in the gTLD marketplace health index. Just on my way over here, I spoke with three different people who had three different ideas about what this effort was. I'm just suggesting that it be documented how it is distinct from other groups. It may not be confusing to us, but the community at large with the same terminology in the title could lead to confusion. Thanks.

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UNIDENTIFIED MALE: Thank you for your clarification.

UNIDENTIFIED FEMALE: Thank you. This is a student from ITU. Thanks for this excellent presentation.

I think maybe your at a starting point is good from a technical point to see what kind of data can be collected automatically, or what kind of data can be collected manually. And whether there is new requirements for as to the protocol [inaudible] other that we can get request the data. And also on how to use these data to reflect the aspect of what we want to have. So as a starting point to see what we can have for the time being, based on the current technology, and to see whether is there any potential requirements to have any new technical requirements or protocol requirements to get the data we need to get. Thank you.

DANIEL MIGAULT: Thank you. Hi. This is Daniel Migault from Erickson and RSAC, but speaking as an individual.

I think we can certainly check the adoption of technologies like DNSSEC or IPv6, but I think it has already been done, so it's good to highlight. But maybe something that might be more specific

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to ICANN would be to define what this domain name is used for. Because if 90% of the domain names are used to create malwares or domain names used only for spam, then we are maybe in even a bigger problem than not implementing DNSSEC. So it's a real goal of the use of all these identifiers that's more complex.

UNIDENTIFIED MALE: Let me try to rephrase this to see if I understand correctly. You're saying that we could collect queries at the roots and sample them to figure out are they spams or variables, and try to draft this over time?

DANIEL MIGAULT: Yeah, or to understand, well, given the zone fine, maybe you can understand also this portion of domain names have been automatically randomly generated for one purpose, and then we have to define which purpose, and how to define that. That's the big question, and I have no idea.

But also looking at the life cycle of these domain names. Why do we end up with so many domain names and so many have just been deleted, too? So that's the kind of questions we can ask and see that are not protocol related, but are really identifiers related.

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UNIDENTIFIED MALE: Let me rephrase it again. So you're talking about making a taxonomy of domain names, and essentially say, if those ones are used for that purpose or some that are randomly generated, so you essentially have a bell curve of how this is being used.

DANIEL MIGAULT: Yeah, maybe.

UNIDENTIFIED MALE: That's a very interesting suggestion. Thank you. No more questions from the remote participants?

UNIDENTIFIED FEMALE: He actually confirmed his question that he was talking about Internet health of Central African Republic.

UNIDENTIFIED MALE: [inaudible]

UNIDENTIFIED MALE: I think where this can be useful is because it will provide data, of course, that are global and can be used per country to identify some of this index, I will say, which any government can use to



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evaluate this per country. But all will depend on the detail, and maybe it will be good for him to join the working group or the mailing list to provide index or information that may be useful for the government in this area.

UNIDENTIFIED MALE: That's also one of the questions that we grappled with early internally is do we want to look at this globally, or do we want to start to slice it and dice it by different categories? One of them could be by region or by countries or by type of organizations. So that will be up for discussion of course.

Well, if no further questions, first, I would like to thank you all very much for staying so late on a Wednesday before the gala. Second, I would like to invite you to join the mailing list to continue this discussion. It's going to be [ITHI@ICANN.com](mailto:ITHI@ICANN.com), so we will send the information about how to join the list. And we will make this presentation available on the list. If you want it before that, please contact me, and I will be happy to send you a PDF of the slides here.

I'm really looking forward for constructive discussions and going to the next step and try to reach the milestone that we just set a few minutes ago to next technical ICANN meeting to come up and have more meat and maybe a document to answer Jari's

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question that we could all read ahead of time and be ready to discuss into more details. So thank you again.

**[END OF TRANSCRIPTION]**