HYDERABAD – Registration Data Access Protocol Implementation
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CYRUS NAMAZI: Hello. If you would please take your seats, we'll begin in a moment.

Hello, and welcome to hopefully what's the last session of the day but the most exciting of all on my favorite four-character word: RDAP. My name is Cyrus Namazi. I am a member of Global Domains Division of ICANN. The topic of our session today is RDAP, its implementation, and the plans for it to go forward.

It has been somewhat of a controversial topic as of late. To help facilitate a conversation across the various parts of the community, I have a panel of distinguished members of our community sitting to my left and my right who will introduce themselves in a moment.

The way we're going to conduct this is it's going to be a very civil conversation. After introductions, Francisco is going to spend a few minutes to give a bit of a background in terms of where we've been in ICANN's RDAP implementations. Then I'll ask Stephanie, who is representing the Registry Stakeholder Group, who recently filed with ICANN a request for reconsideration,

which is actually on hold pending conversations like this and more, to help us as a community understand what the issues are from the stakeholder group's perspective. Then hopefully we can engage in a lively, productive conversation.

Without any further ado, let's go ahead and do the introductions. Patrik, would you please kick it off for us?

PATRIK FALTSTROM: Patrik Faltstrom. I'm Chair of the Security and Stability Advisory Committee here at ICANN.

JOE WALDRON: Joe Waldron from Verisign.

JIM GALVIN: Jim Galvin from Afilias.

FRANCISCO ARIAS: Francisco Arias, ICANN.

JOHN LEVINE: John Levine, speaking about but not on behalf of the IETF.

STEPHANIE DUCHESNEAU: Stephanie Duchesneau with Google.

ROGER CARNEY: Roger Carney with GoDaddy.

CYRUS NAMAZI: Thank you all very much. Francisco, are you ready? Engage.

FRANCISCO ARIAS: Thank you, Cyrus. This is Francisco from ICANN staff, GDD Technical Services. To start the conversation, let's – if this thing works. No.

Would you mind going to the next slide? Oh, something happened here.

So I think Cyrus already covered the objective of this session – I think that's fine. Okay. Next slide, please.

Okay. Something happened with the format. I apologize for that. I will need to look at my slides so I can remember.

This is the list of the key features that RDAP has in cooperation with the WHOIS protocol that Port 43 is usually called by members of the community.

With RDAP, what we obtain is a standardized way to query and to obtain responses and error messages from the protocol. We can also have secure access to data – for example, by using

HTTPS – so you can have encryption of the data you are passing between the server and the client and also a way to authenticate a server so that you know you're talking with who you think you are talking to.

RDAP also provides extensibility so you can, for example, add new fields or new objects to be queried. It also has a bootstrapping mechanism that is a way to easily find the authoritative server for a given query. That's something that you have in WHOIS. By way of example, in the New gTLD Program, we come up with something that some techies would call a hack, a shortcut. We define in the contract that, in order to make it easy to find the WHOIS server, everyone will have to use a naming convention [that is] – WHOIS.net.tld.

In RDAP, you don't need to have a naming convention or anything like that. The protocol already covers the way to discover the authoritative server.

There is also in RDAP another feature which is a standardized way of redirection or a reference mechanism. This is, for example, useful in the context of a thin registry, like .com, .net – oh, we have the slides now. Excellent.

So with RDAP, we have a standardized way so that the registry, for example, could either, when it is sending a query, could redirect to the registrar, or it can provide information it has and

then say, “Here is a link to information that the registrar has on this domain name,” so that the client can get the full set of information.

Another benefit of RDAP is that it builds on top of a well-known protocol. That’s HTTP or HTTPS. This is something that many organizations already know how to handle. It’s very common since this is how people have access to the web.

Another benefit of RDAP is native support for internationalization in WHOIS. By way of example, WHOIS has no way to say, “This is an encoding of the data that has been transmitted.” So you have a way to know what it is you’re getting before you have to show it (“you” being the client). So it doesn’t have to go for internationalization, while RDAP does.

The last key feature that RDAP is differentiated access. For example, anonymous users – those that do not authenticate with the server – will get only limited server data, while authenticated users will get full data. This is just an example of a potential policy for differentiated access, just to show what we mean by that.

A little bit of history on RDAP. What we are doing here in ICANN to replace the WHOIS protocol is something that started in 2011. At that time, SSAC published SSAC 051, and one of the recommendations in that document was that ICANN community

should evaluate and adopt a replacement protocol for WHOIS. That recommendation was adopted by the Board shortly after, and the Board instructed staff to develop a roadmap together with the community to implement these recommendations. The roadmap went through community input and was finally published in June 2012.

At the same time, while ICANN was working on that, the technical community in the IETF started the work on developing this protocol that eventually was called RDAP. That work in the IETF was finalized in March of last year, in 2015, and the set of RFCs defining RDAP were published.

Then in June 2015, we started the work with the community on developing what we call the RDAP gTLD profile that maps RDAP features to existing policy and contractual requirements in relation to WHOIS, or RDS, as it is called in the contract. The first version of this profile was published on the 26th of July of this year.

This is the timeline of the development of the profile. This is in more detail. We had a series of discussions with the community, as you can see, such as within ICANN meetings and IETF meetings. We had a discussion in the gTLD tech mailing list. So this development went throughout a year until the publication on the 26th of July that I already mentioned before.

The current status of RDAP: the implementation of RDAP was [initially required in the policy days.] It was published on the 26th of July. The policy called Consistent Labeling and Display included a provision to request the implementation of RDAP by all of the gTLD registries and registrars.

However, as Cyrus mentioned before, the Registry Stakeholder Group submitted a request for reconsideration requesting ICANN to remove the requirement to implement RDAP from the policy. So ICANN did that, and the updated RDAP policy is up for public comment now. I believe it ends somewhere in December. I apologize that I don't have the exact date.

Following that, for RDAP the current plan is to request implementation of RDAP via contractual requirements since most of the gTLD registries and registrars – I think, in the case of the gTLD registries, 99% of the gTLDs have a contractual provision relating to RDAP. In the case of the registrars, the figure is 97.something%. So most of the contracted parties in the gTLD space have this contractual requirement. So we have a way to require implementation for the vast majority of the gTLD registries and registrars outside this policy.

This is, by the way, something that was described in their request for reconsideration. The Registry Stakeholder Group was requesting ICANN to do the request for implementation based

on contractual language. So we intend to do that following consultations with the community, like this one.

That's it.

CYRUS NAMAZI: Thank you very much, Francisco. Let me hand it over to Stephanie, who will inform us of the issues that the Registry Stakeholder Group has raised in this regard.

Stephanie?

STEPHANIE DUCHESNEAU: Thank you, Cyrus. And thank you, Francisco, for doing a good job at outlining some of the process issues that led into this, specifically the fact that this has been intertwined with the thick WHOIS recommendations and the Consistent Labeling and Display policy.

I want to put on the record that these two efforts – there were reasons for some coordination across both the RDAP and implementation of the CL&D. For instance, in terms of being able to coordinate their implementation, we were able to achieve some synergies and make implementation more lightweight and potentially more rapid. I've seen good collaboration from ICANN

in terms of responsivity to dealing with the ways in which the two policies interact.

The problem came, though, with the fact that, as Francisco indicated, registries have both a requirement to implement the requirements that come out of the thick WHOIS consensus policy, including these CL&D polices, and to implement the RDAP in their contracts. But these two requirements come from very different places.

On July 28th, all of the registries received a notice for the implementation of the Consistent Labeling and Display process. At a high level, this just provided a new format around which all of the registries would have to standardize their WHOIS outputs.

But notably, within this announcement related to what was a consensus policy that all registries were required to implement, the requirement to implement RDAP was actually inserted into it. And not just RDAP: RDAP along with ICANN's additional operational profile, which overlay an additional set of requirements that were not developed by the community, were not relevant to the consensus policy, and really had no belonging in the announcement. It wasn't within the scope of the consensus policy. It wasn't discussed by the working group, and it was not reflected in the recommendations.

Similarly, it's important to note that Specification 4 of the registry agreement, while it does provide a requirement to implement RDAP itself, there's no provision that says, "The additional requirements for WHOIS and how that is supposed to be implemented can be mapped over," nor that ICANN has its own right to develop additional requirements beyond the standard of protocol that comes out of the IETF.

There is an ability for those requirements to be introduced, but the proper avenue through that is through the consensus policy process, the policy development process. Right now, we see a lot of ongoing effort around WHOIS, most significantly, the policy development process for registration directory services, which is where we would expect policies for RDAP, if they choose to leverage RDAP as a mechanism, should be developed and would be developed.

So we see this as instance where ICANN has endeavored to unilaterally introduce additional requirements to the consensus policy that don't actually derive from the community, that don't develop from the process that we've all agreed to in our contracts. That's the framing for the reconsideration request.

I'll now go through some of the other specific issues with RDAP that were raised in the reconsideration request. First, as I noted before, is this contravening of the policy development process.

By going outside and suggesting that ICANN can introduce requirements unilaterally, without going through it, is really undermining to the PDP and the processes that we've all subscribed to, that we all agreed to, and the checks and balances that are built into that process.

Similarly, there's additional processes, including those outlined in 7.6 and [7.7] of the registry agreement, where outside of the consensus policy process, ICANN can introduce changes to the contract – I guess negotiate in the case of 7.6 – with the Registry Stakeholder Group. But there's really significant checks and balances built into that.

By going against that and going outside of those processes, registries don't have the opportunity for back and forth, for engagement, and potentially for exchange in the form of a negotiation. So there's a lot of procedural concern around how this came about.

Second, and more obviously, it introduces additional requirements for registries and registrars. One of the things that we've always advocated as a principle point is that ICANN should take an approach of minimality in implementing policy. Where there's ambiguity around what a policy is saying, there shouldn't be an effort to create potentially onerous new requirements/new interpretations. They should choose an

implementation that does not necessarily burden or just stay totally silent on things that aren't covered and allow for flexibility if there's no other basis for introducing those additional requirements.

As noted, it entangles CL&D policy with the RDAP, despite a lack of basis for that. It's concerning because it doesn't actually come out of the consensus policy process. It falsely suggests that it's community developed when that's not the case.

I think that there are also potential issues with attempting to confine all registries to a single implementation model for the RDAP. While the operational profile I think could be a useful tool for a lot of registries and providing one means for how it could be implemented – we're not saying that it should go away, but it shouldn't be confining.

Francisco did a really good job of mapping some of the different features of the RDAP in his earlier slides. We think that it would be really useful, particularly to inform work like the RDS PDP, if registries were actually experimenting with different implementations and we could get real data around what those look like and how they work.

Another one is precedent. It does set an expectation that ICANN can circumvent the processes that I've described before and just

go around and introduce requirements on its own merit without being required to follow the processes that are outlined.

The last question is one that was also cited in the reconsideration request: whether implementation of RDAP was commercially feasible, which was a component of the language in the registry agreement that requires registries to implement it.

I think there's a disparity of views within the registries around whether it's currently commercially feasible. Some state that, because these policies haven't been developed, requiring it is premature.

We as Google believe it's not necessarily premature to implement RDAP itself but, where the two systems are being maintained in parallel and registries are still going to be required to implement WHOIS until we see what comes out of the RDS PDP, it is premature to be introducing additional requirements.

So where are we now? The good news is that ICANN did retract the announcement that we were concerned with. There is another version of the Consistent Labeling and Display policy that is out for public comment that removes the RDAP requirement. We presume that the announcement to implement the RDAP will be forthcoming and separate and hopefully

remove the additional requirements that ICANN endeavored to overlay.

So there's good news, but I think there's still a need to be responsive within the public comment period about why this is the proper course and also about some of the procedural concerns that the process raised.

CYRUS NAMAZI: Thank you very much, Stephanie, for that eloquent description of the issues. I wrote down four things that hopefully sum up what some of the challenges are from the perspective of the Registry Stakeholder Group. One was the consensus policy for developing the profile; procedural concerns in terms of ICANN setting a precedent, I guess, for essentially what you consider to be procedures that are not within our remit; and then the commercial feasibility aspect of it.

I forgot to mention, actually, that we also have a remote panel participant. Mark Kosters, are you on the line? Can you hear us? He's definitely in the Adobe room.

MARK KOSTERS: I can.

CYRUS NAMAZI: Okay. Excellent. Thank you. Thank you for joining us. I'm sorry I forgot to introduce you earlier. Would you like to just spend two seconds introducing yourself?

MARK KOSTERS: Sure. I am Mark Kosters. I'm the CTO of ARIN. I'm actually maybe one of the guys that actually helped bring all this together in terms of putting RDAP on the table. We at ARIN started this process back in 2010 to upgrade our WHOIS servers. When we did so, we realized that we needed to really rethink this process.

In doing so, we actually came up with a system that was much more powerful than the existing WHOIS cluster we had before. In doing so, we realized we had a huge uptake in queries that we were easily able to handle based on the structure of queries and results that came back from WHOIS.

Thank you. We'll talk more about this later.

CYRUS NAMAZI: Thank you very much, Mark. Let me ask you, Patrik. As head of the organization that kicked off this entire effort a few years ago, maybe you can share your perspective with us, perhaps. Thank you.

PATRIK FALTSTROM: Thank you very much. I would like to add a couple of background issues that were not there. We actually started this in SSAC in 2003 in SAC 003, our third report, where we point out a couple of features that the current WHOIS protocol is not missing.

We followed that up in SSAC 023, where we were looking at spam and e-mail and misuse of our structure [and] services due to lack of these features. In SSAC 003 in 2003, we asked ICANN staff to do a yearly review and hear the reporting back to the community of what the status is with evolution of the directory services protocol that was in use.

In 2008, in February, we released SSAC 027. In that one, we finally drew the conclusion that the current WHOIS protocol is not something that can fulfill actually implementing the features for the functionality that is needed.

As a result of all of that work and the beginning of the round, we wrote the document that Francisco was referring to. So I think it's important for the community to know that we were talking about WHOIS long, long before. So the conclusions that are in SSAC 051 are precluded by quite a lot of work.

So I think it's not the case that SSAC could have been a surprise to anyone. It's the other way around: we looked at what's happening.

So we have a position in SSAC that we think it is unfortunate that the discussion around directory services and implementation of that has taken such a long time. We see an absolute need for differentiated access, which is not possible to implement in the current WHOIS protocol. That the discussions, regardless of whether they're technical or business-related, contractual or whatever it is, that have been connected to in one way or another – intentionally or unintentionally – with the discussions on how to move forward to get this differential access is extremely unfortunate. We have tried from SSAC's side to help with taxonomies and tried to encourage the community to discuss one problem at a time. So we are happy every time we see that things are moving forward.

We were concerned when we saw the reconsideration request coming in because we, of course, were nervous that that was another wrench that was thrown into the gears that would make things move slower. We also had some discussion with the Board Governance Committee and others regarding how to evaluate that. We very, very quickly saw that discussions were taking place between staff and the considered parties, which we saw as a positive thing, regardless of whether it was correct or wrong by the Board Governance Committee to just saying something, depending on how one interprets the ICANN bylaws.

For SSAC, that does not matter. We absolutely need differentiated access. It's really, really important, and I cannot stress it more clearly than we have sort of said it since 2003, although not as clearly in our first report.

Thank you.

CYRUS NAMAZI: Thank you very much, Patrik. Let me turn it over to John Levine, who is not here to speak on behalf of IETF, but he has been intimately involved. You know the IETF RFC was the trigger point for ICANN actually to begin developing the profile that Stephanie was talking about and that Francisco talked about and start asking the registries to implement it. Perhaps you can share your perspective with us.

JOHN LEVINE: Yeah. The background here was actually, as we heard from IP registry side, that their WHOIS is as much as a mess as the domain name WHOIS, and they had the same sort of capacity problems. ARIN and RIPE put together prototypes. They sensibly tried to invent as little as possible. "Okay. We need a query response protocol that scales well. Well, he have HTTP." "We need a response format that is easy to describe and parse."

There were two choices – XML and JSON – and we eventually chose JSON.

The IGF started by putting together a working group essentially to do this HTTP and JSON thing just for IP addresses. At that time, we really wanted to limit the scope. When people said, "Well, let's do domain names at the same time," I personally was very skeptical because, given that every attempt to deal with domain name WHOIS has ended up stuck in a tar pit, I was afraid this would be a problem, too.

Fortunately, I was wrong. We had a lot of interest from the ccTLD community. We had a wonderful document put together put together by some people from CNNIC, who went through every single WHOIS server they could find and made a complete inventory of all the query terms and all of the result terms, which was really useful.

Then we went through and ticked off the topics. We had good representation from all of the communities. We went through and said, "Okay, what are the queries we need for IP addresses? What are the queries we need for domain names?" Those were settled on pretty quickly. And "What are the responses that we're going to get back?" That took a little longer, but with the document from CNNIC used as a reference, we could be

reasonably confident that we had a design that covered all of the result types that people cared about.

We had people building prototypes all along, so we knew it would work. One of the things that was the most contentious was the bootstrap, which Marc Blanchet, sitting in the corner, ably shepherded through. We had a variety of more or less feasible things until we finally asked IANA, "Could you host a blob of bootstrap information at fixed URLs?" and they said, "Yeah. We can do that." We said, "You know, there'll be a lot of queries," and they said, "No, that's fine. We can do it."

Having done that, by IETF standards, this thing came together pretty quickly. For IP addresses, it works great. Like everybody else, I have WHOIS scraping software. My text WHOIS scraper script is 3,600 lines, and it gets most but not all of what I need. My RDAP query thing for IP addresses is about 30 lines of Python, and it works great. It reliably gets back the answer.

There are still some prototype issues and stuff, but my experience is that, from the technical community, this is the way the IETF is supposed to work. We had a well-constrained problem. We had prototypes so we could actually verify that stuff worked. We went back and forth to make sure that the problems that we solved were the ones that needed to be solved.

I'm really looking forward to it, both as a client – and I also happen to be the smallest registry in the room. I am the legacy geographic registry for some sub-domains of .us in upstate New York, which have never had any sort of WHOIS information. But with RDAP, it would be trivial for Neustar to direct the queries from my four registered names to my tiny RDAP server, which individually, doesn't really matter. But the fact is that this sort of thing naturally falls out. It's easy for them. It's easy for me.

So while I appreciate that there were process screw-ups here, it doesn't sound like there are big technical problems to be solved. If you're going to do something other than WHOIS, RDAP uses technology we all understand. Google certainly understands how to do web servers that perform well. I'm looking forward to working this stuff out and bringing it into the community so we can actually have some – just to back up a little bit, on Patrik's comment about differentiated access, HTTP has that, too. There are various sorts of authentication. My sentence is one that says that there has to be some way to do federated authentication so you can authenticate to one server and then, as the queries are then relayed from server to server, you don't have to log into each one of them, which in fact Scott Hollenbeck at Verisign has already prototyped.

So this is a really nice, little piece of technology. It's something we all understand. It's something we all have the libraries is for.

So I hope we can get past the process issues and actually make it work.

CYRUS NAMAZI: Thank you very much, John, for that great description. We have a couple of large registry operators and a very large registrar, so let me turn it to you, Jim Galvin. Is your challenge with the, as John calls it, "process screw-ups," or is there something deeper in this whole thing?

JIM GALVIN: Thank you, Cyrus. I want to set aside the process questions, not because I don't care about them or that they're not important, but let's focus on the substantive concerns that we have in terms of implementation and deployment.

The concern that I have with respect to deploying RDAP is actually related to the fact that our environment and our ecosystem has evolved. We have always been a strong supporter of RDAP, and John mentioned it in the IETF. There were some implementations of RDAP and some prototyping that was going on in parallel while the standard was under development. Both Verisign and ourselves at Afilias were deeply involved in creating those prototypes, as is usual in the IETF. So you have the

standards informed by actual implementation in what you're doing. So all of that was a good thing.

What I see now in the ICANN world, though, is that we are coalescing, merging, and moving forward into having just this one working group, The Next Generation RDS PDP Group, which is looking at the larger issues of the policies that are going to affect the directory service that needs to exist. That of course will necessarily have an impact on the technical implementation. So differentiated access is important, but there are some policies that are going to have to be developed that go with what those credentials are going to look like and how you're going to manage them.

I've been very supportive of the profile that has been put together and put up. I think that that's important and we should implement and have it, but the reason I don't want to deploy RDAP right now is because of the effect that that next-generation RDS is going to have on the implementation.

What happens is you end up having to have two production systems in place that you then have to carry forward with, and that just feels like more work than is honestly necessary. We have a WHOIS system that at least is maintaining where we are. While we are actively engaged in figuring out what we want our new directory service to look like to create the rules and policies

that we've never actually had before – they've been implicit, expect for whatever details might have been in a contract, which means that there are subtle differences in some of the legacy registries in particular as compared to the new gTLDs – I'd rather see the policy discussion finish and come to closure, especially with respect to coming to closure on what is the purpose of registration data so that we know what it is we're implementing.

One last thing about technical details. There are actually issues that could require changes, depending on how the policies play out in EPP in this arena. One of the things that's interesting in a directory service display is whether or not you're going to have language information, for example, that gets passed around with contact information or not. There's some discussion about whether that's important or not.

It also is something which was pulled out by the translation and transliteration work as well as the Internationalized Registration Data Expert Working Group. Both of them had recommendations that talked about this issue of the importance and need for language information. Well, the ability to do that in EPP is very limited compared to what you would really like if you're going to do this in a proper way in the environment. So that has consequences from the beginning to the end, beginning right at the registrant, right up through whatever the registrar has to do, coming into the EPP channel and into the registry so it can get

handed off into the directory service. None of that exists. So there is technical work to be done.

Rolling out RDAP now as a requirement is creating a production system that I know is going to change and might have interesting consequences in the rest of my system. So I don't want to have two production systems.

What I'd really rather have is the suggestion that I should be allowed to deploy an RDAP system as an experiment and put it up alongside it, because then what I would actually do is some implementation of some of the things being talked about in the Next-Gen group. So I don't want to be obligated to do it, but allow me to put it up alongside if I want to. It's not a production system. I can take it down, put it back, or whatever I need to do. I can make changes to it, and I can experiment with what's being suggested in the Next-Gen group. Thus, I can feed back and inform that policy.

I think this important, especially with respect to some of these details about how we're going to manage the language issue, how we're going to manage differentiated access, and how we're going to deal with the credentials that go with building such a system.

Thank you.

CYRUS NAMAZI: Jim, thank you. I can appreciate that obviously nobody wants to deploy two different systems or deploy a system that's going to be obsolete in a short period of time, but at least my understanding of the next-generation RDS work is that it's years away. I'm guessing five-plus. Am I misunderstanding this? And by the time that actually comes into so-called reality and life, there's probably another thing on the horizon that's five years off, and then we have to wait for that. So where do we draw the line?

Then I'll go to Francisco, and then Maxim in the queue. I haven't forgotten about you. Thank you.

FRANCISCO ARIAS: Thank you, Cyrus. Just very quickly – oh, sorry. Did you mean?

CYRUS NAMAZI: Let Jim go first and then you.

JIM GALVIN: Certainly, you look at the work plan in the next-gen RDS and they have three phases of work. Sure, to complete all the things that they have out there, you are looking at years down the road. But what I observe – then I'll really let Francisco speak to what

he wants to say here – is that I feel like there is an opportunity here to pick off pieces as we go. I think the opportunity to experiment and do some of these things is really important.

The first phase of this work and trying to figure out what the requirements are going to be and coming to a conclusion about the purpose of the registration data is actually a pretty significant development, and that will complete in that first phase. These kinds of things always take too long. I don't even want to predict how long that'll take. I think they had hoped they were going to be done this year, or I think in the original timeline for phase one. That clearly isn't going to happen.

But I think, as we evolve and things move and we understand better our ecosystem, we can revisit what to implement and what to deploy and what to require and do it as we go.

Thank you.

FRANCISCO ARIAS: Thank you, Cyrus. Very quickly, regarding the language text, there is – as I believe you are aware of – that the translation and transliteration policy, there is a meeting tomorrow at 2 P.M., and that policy is dealing with the language text issue.

CYRUS NAMAZI: Thank you, Francisco. I'll come to you for a second, but I wanted to ask Joe because I think Verisign is actually doing an experimental RDAP. Mark on the phone said that and I think John has his server up in, I don't know, Boston or someplace, and running.

So what is the difference between what Jim is saying versus what you've done? And I'll come to you in a moment, Maxim.

JOE WALDRON: Thanks, Cyrus. It has been an interesting discussion, and I appreciate Patrik going through the history. Of the analysis of what the shortcomings were, I'll just touch on real quick a couple of the attempts in the past because I think that's relevant.

There was – I may get them out of order – WHOIS++, Referral WHOIS – is it painful? – and IRIS; IRIS most recently in the early 2000s.

So we have seen attempts to correct some of these problems in the past, and I think, while Verisign has been engaged in the development of the standards – and you're right, we do have a pilot up – we want to make sure it's done correctly. And that's what I think you see in the pilot that we've been running. We've had a pilot that Scott Hollenbeck has had in our labs for over a

year, but it continually evolves as we learn things. So we keep making changes. He has even been working through, over the last several weeks, some corner cases to ensure that the system behaves as expected and as we learn more.

So I think that really goes to the point that Jim was talking about, that having a profile that specifies what the solution is forces us down a path of a production deployment system that then becomes much more difficult and expensive to adjust.

So I know Mark has an RDAP system. There are some other registries. There are RDAP implementations out there, whether in production or in pilots like we have, that we can learn from. I think that's where we are right now: ensuring that, as we go through to develop this, we're doing it in a way that doesn't just replicate the sins of WHOIS, so that we're [not] just starting RDAP in its life with a black eye of saying, "Well, it's no different than what WHOIS does."

And you're right. We can continue to evolve. You don't have to wait until it's all done. You don't have to have the differentiated access. That doesn't all have to be done before you get started.

So I think part of the question is, how do we as a community put together a coherent launch plan so that we don't have throwaway code, so that we aren't running systems that are more difficult to adjust? Because once you put a production

system out there, it's much more difficult. When we don't have a direct relationship with every consumer of that data, making changes becomes much more complicated.

CYRUS NAMAZI: Thank you very much, Jim. Maxim, if you could introduce yourself.

MAXIM ALZOBA: Maxim Alzoba, .moscow. Two notes. First of all, it's about differentiated access. We have a situation with tiers of access. You have to know to whom to provide it and what to what to allow to whom. Basically, these discussions are ongoing during the RDS PDP Working Group work, and we have complicated issues because of different jurisdictions allowing to store different things and allowing to access different things, and it's highly dependent on the party.

Also, we have personal data issues and law enforcement access issues because, if you implement the idea of differentiated access without providing law enforcement with the access – we had it here – then there's zero access. You will have lots of issues.

Every registry will have to call their local enforcement and describe why they did this thing because you cannot resolve

contractual and operational issues by technical means solely. It should be done all together. Implementation of RDAP with tiered access without actual work on the legal and operational stuff is useless. Actually, it creates issues.

The second note is about commercial feasibility. When you compare RARs to registry operators, do not forget the budgets of the average RAR – [there's] not many of them – and a registry. Don't point to the top five or the top ten. We have different budgets, and implementing basically the same thing a few times is effectively a waste of time and your quarters and a waste of your money.

Thanks.

CYRUS NAMAZI: Thank you, Maxim. Stephanie, you had your hand up?

STEPHANIE DUCHESNEAU: Yeah. I just wanted to respond briefly to some of the concerns that were raised by Patrik. And this is on behalf of Google because there's definitely a diversity here across the registries. It is definitely not my intent to, in participating in this process, defer the implementation of RDAP. We've developed the code. We're ready to implement it. Anecdotally, one of the concerns that we had with the announcement for CL&D and RDAP both

was also that it introduced a do-not-implement-until date. We were concerned because we were ready to basically go ahead and implement it next week and wanted to do so. It's concerns around the process and the additional requirements that were introduced alongside the RDAP.

And it's not a problem with the profile itself. We've actually found having the profile at hand really useful in developing our own implementation of it. But that doesn't make it a set of requirements.

CYRUS NAMAZI: Thank you, Stephanie. Francisco, you wanted to respond?

FRANCISCO ARIAS: Yes. Thank you, Cyrus. Just quickly on that regard, I think there was some confusion with the "do not implement before" date. That was intended for the CL&D policy and not RDAP. RDAP did not have such a requirement.

CYRUS NAMAZI: Patrik, please.

PATRIK FALTSTROM: Thank you. There must be some misunderstanding because it was absolutely not my intention to point out or to put blame on

anyone. On the contrary, I'm happy that things are moving forward.

Another thing that happened was that I made a funny face here when WHOIS++ was mentioned. Some people around here seemed to not understand the connection between me and WHOIS++. That was something that I created once upon a time when I was working Bunyip in Montreal. So, yes, even I have my scars from my experience of making mistakes in this business.

Thank you.

CYRUS NAMAZI: Thank you. Roger, you want to chime in with your thoughts?

ROGER CARNEY: Well, first let me jump on a soapbox here. Many of you already heard me say this many times. RDAP isn't replacing WHOIS. It's not the intent to replace WHOIS. RDAP simply is to replace the communication process of WHOIS. RDAP doesn't store or manage data at all. It's just moving data from point to point. That's just my soapbox and I'll jump off.

I know that John mentioned some work at IETF. There actually was another group, a modern group that was looking at using RDAP for their own registration data outside of addresses,

outside of names – everything. They were looking to use it. Where they went with that I have no idea. But it's one of those things: when you look at RDAP, it is a very flexible and dynamic protocol that is destined to be in our future.

From a registrar standpoint, I don't have the same concerns that Jim and Joe have. It's one of those things that, fortunately, in our contract, we were getting out of the WHOIS business pretty much anyway. As soon as the remaining few thin registries go away, registrars won't have to provide Port 43 service anymore. The only thing that registrars will have to do is still provide the interactive webpage. But in a couple years, registrars won't have to provide any truly mass electronic way of getting WHOIS data from their data store. So I don't have those same concerns that the registries have about RDAP.

But, again, I do think that RDAP is a good protocol that does enhance the old-and-tried Port 43 service.

Thank you.

CYRUS NAMAZI: Thank you, Roger. We have a question online. Would you like to read that, Chris? The letters are too small for me eyes.

[CHRISTOPHER BARE]: And getting small for mine, too. A question from Volker Greimann: "What real tangible benefits does implementing provide if implemented right now?"

CYRUS NAMAZI: That's a very good question. Mark from ARIN on the phone, would you like to take a stab at that? Then we'll go back to the panel that's present in the room.

MARK KOSTERS: Sure. It allows for real tangible benefits in giving structured queries and responses. It has built-in internationalization and the ability to have differentiated access control.

For example, one of the things that our community has asked us for is giving them the ability to have unlimited results back on a particular query. If you are an authenticated user, you will be able to receive that sort of user service. If you are an unauthenticated user, like you would in WHOIS today, you would only get a maximum of 255 results. This would benefit not only those who have [lots of stuff] in their database but also law enforcement.

CYRUS NAMAZI: Thank you, Mark. Francisco, you had raised your hand. Anybody else would like to get into the queue? Go ahead, Francisco.

FRANCISCO ARIAS: Thank you, Cyrus. Volker, to answer your question, building on what Mark mentioned, in the AC room we are showing slide #3 – List 8: Main Benefits of RDAP vs. WHOIS. Those are the benefits that you will get if you implement RDAP.

In the case of differentiated access, the last one in the gTLD RDAP profile says that only those contracted parties that have allowance or a requirement to implement that in their contracts will get the benefit. Currently, it's a very limited number – only three gTLDs. But the rest of the seven benefits will be immediately available. Thank you.

CYRUS NAMAZI: Thank you, Francisco. From my perspective – and I'd like the experts here in the room and on the phone to correct me if I'm wrong – I thought we were beginning to face a major issue with the transfer of personal data across different jurisdictions in terms of privacy laws, which as Jim just mentioned to me, continue to be in flux. RDAP, from my perspective, was the vehicle, the conduit, to actually sidestep that time bomb, really, for a lot of the thick registries. Am I missing something here?

Please introduce yourself. Please.

KAL FEHER: Kal Feher, Neustar. Just following this discussion, I'm finding it hard to separate the deployment of RDAP as the delivery mechanism for RDS material, the implementation profile that was released earlier in the year, and the opportunity to innovate those innovation profiles.

Perhaps if someone could clarify for us in the near future, in the next few months and possibly the following year, whether we perceive that we're going to have a strict implementation profile that we're all going to have to follow, whether we're going to deploying our own implementation profiles, and, going forward, whether we might have to implement or maintain multiple implementation profiles because a lot of the benefits that I'm hearing about are really dependent on the profiles. So are we going to make them strict? Are we going to make them common? I'm not really sure what the regulatory environment is going to be, so it's hard to understand which of these benefits will actually materialize and which ones are we just suffering from from an operational/maintenance point of view.

CYRUS NAMAZI: Thank you very much for that question. Would anyone like to respond?

Jim and then Francisco.

JIM GALVIN: I want to go back to something that Roger said and maybe characterize this a little bit differently. Maybe this will help.

The problem with the term WHOIS – SSAC addressed this when it created a taxonomy for WHOIS – is that we're really talking about three different things. We're talking about registration data when we often say WHOIS because we like to talk about WHOIS data. It really should be registration data. WHOIS is a protocol as defined by the IETF, and it is simply a communication vehicle. I send a query, I get back a bunch of stuff.

In fact, one of the key advantages of RDAP is the fact that I can send a structured query and I get a structured response back – the advantages of that are obvious to anyone who's technically inclined – as compared to WHOIS. Then you have this directory service, and WHOIS is often used to talk about the directory service, which is, "Now that I have a way to do a structured query and get a response and I have this response, I now want to display it in some way or massage it in some way." So there's the

directory service side of it, which is the receiving of a response and then doing something useful with it for the user.

Cyrus, you were talking about moving data around and RDAP solving this problem of where the data is and how to deal with the data. I think what's important – this goes back to what Roger was saying before – is that RDAP is just a tool. It is a particular mechanism that offers us a lot of features that could potentially solve a number of problems that we have. Francisco has listed some of these potential benefits up here, and that's just because RDAP as a tool can do those kinds of things for it.

So RDAP doesn't solve the problem by itself. There are policies and administrative requirements that have to be overlaid on top of that in order to realize the benefits that you have up here or the benefit that you're looking for in terms of moving the data around.

I think the path you were going to head down here is thick registry versus thin registry and where the data is. If I have all the data in a central location and everybody is a thick registry and all the registration data is there, then RDAP provides a convenient tool for addressing all the privacy concerns that I have. It has differentiated access features so I can do all of those kinds of things.

But I would also argue that RDAP doesn't require a thick registry. RDAP is simply a tool, so one of the ways in which one could deal with privacy concerns – this is what really concerns me about the Next-Gen RDS Group: the privacy discussion is one that hasn't happened yet and hasn't started and really won't right away. I think that the consensus that comes out those discussions is going to dramatically change what the RDAP deployment looks like and what the requirements are in registries and registrars.

It offers an opportunity, also. For example, what I think about is the idea that, if you were to move everyone to a thick registry, then registrars would no longer have to have any kind of directory service. So all of that would shift away.

On the other hand, you have all of these privacy concerns and legal concerns about data transfer. Maybe the data can't move from the registrar to the registry. If you run into situations like that, one of the things that's interesting here, if you let privacy drive you in that direction or your data storage requirements – the European Union is typically the canonical example of data privacy laws, where the data has to stay where it is – is that RDAP is a tool that allows you to leave the data where it is and be able to point to it and then go get it there, which means the registrars might still have to provide RDAP services because they

can't move the data to the registry. So thick registry might not be the right model.

But these are things that'll happen as a result of the RDS discussion. Until we have those discussions and get all of the issues on the table and have all of the different influences that are going to drive what we want out of our directory service – because, again, the ecosystem has evolved – I don't want to deploy RDAP.

We are wrestling with the fact that we have a legacy system in WHOIS, and everybody wants to take what WHOIS was and move it forward. I'm thinking anything I deploy today I'm going to be stuck with. That's the real problem. And I don't want to do that. I want to know what I'm deploying up front and then deploy that. That's why I don't want it to be a production system. That's really the bottom line. Thank you.

CYRUS NAMAZI: Thank you, Jim. Joe?

JOE WALDRON: Thanks. I just wanted to expand on a couple of the points that Jim just made. The fourth bullet on slide 3 that Francisco has up there talks about a bootstrapping mechanism to find the

authoritative server. I want to address "authoritative" a little bit differently.

There's also authoritative data. I think, when you start looking at having a thin registry, we're thin because that's the data that we require in order to do our job. If you go look at the contact data, it isn't necessarily required that a registry maintain a unique database of registered domain names and ensure that they resolve on the Internet.

So that's part of the whole reason, if you go back in history to the separation of the registries and registrars, why .com, .net, and .org were originally thin. Then we had the ability in the EPP protocol to collect that thick data, which is the contact data for the registrant: technical contact, admin contact, and billing contact.

We had that ability, but I think part of the question is, whether you're talking about the legal/privacy concerns, on the perception. When someone queries the registry and receives data in one of those contacts, is there an assumption of authoritativeness for that data? Because I think there has to be some clear way. An average user won't know whether certain data is authoritative or not.

The classic example I think that we've always talked about here is expiration date. Registries have expiration dates of a domain

name. Registrars have expiration dates, and sometimes those differ. Or even contacts. If someone updates a contract and doesn't synchronize that, you can't have authoritative data living in multiple locations.

So I think that's one of the great capabilities that we get with an RDAP protocol like this: you can query the authoritative source for the data and not introduce this ambiguity or additional complexity in the system in terms of making sure that we're trying to maintain synchronization of data on an ongoing basis.

CYRUS NAMAZI: Thank you, Joe. Jordyn, please?

JORDYN BUCHANAN: Thanks, Cyrus. It's Jordyn Buchanan with Google. I want to take a moment to somehow agree with almost everyone on the panel to some degree but mostly to just recognize that I think there's a really great opportunity in front of us.

We've heard about RDAP's additional capabilities. I think there are a lot of them. They showed up in Francisco's slide. We heard from ARIN that they're already seeing significant operational benefits from the deployment of RDAP. I agree it's remarkable that this has moved through the IETF in a relatively speedy

manner and managed to capture most of the requirements for both the RIRs as well as the domain registry and registrar space.

Also, I agree with Patrik on things like how differentiated access are really critical to taking advantage of the capabilities that we have in RDAP and addressing some of the security issues that SSAC has identified in the past.

At the same time, I think Jim and Joe are right that this is a little bit of a moving target. Anything we deploy now is probably not going to survive the policy processes going right now with the Next-Gen RDS PDP.

But Cyrus is right. That thing is not going to happen very quickly. So what I don't want to lose here is the promise of the opportunity that RDAP presents to deal with both operational problems as well as real security problems by, as [it was] talked about in the last panel, allowing the perfect to be the enemy of the good.

I think there's a real simple way out of this. As with most compromises, it's not the thing that makes everyone happy, but I think it's mostly good enough. And that is, in most of the registry agreements today, there's a requirement that, once the IETF has approved its successor protocol to WHOIS, which they have – we have RDAP approved by the IETF – ICANN has the ability to tell registries that we need to implement it.

It doesn't go so far as to say ICANN has the ability to specify an operational profile and constrain the ways that registries implement it, and I don't think it should. I think ICANN should tell registries to get on the ball, start working on it, and get it rolled out. That will give registries the flexibility to try out features like differentiated access to do the experiments that Jim is talking about that will inform the PDP so the PDP has real operational experience to work from as opposed to just speculating.

We're really good at speculating at ICANN and not very good at working from data. I'm encouraged by the few places where we're starting to reverse that, and this is a real opportunity to do so.

As long as we have existing Port 43 WHOIS implementations operating under the existing policy framework, no one loses anything when registries gain that flexibility. Everyone that uses WHOIS today can c0ntinue to do so. We have the opportunity to learn a lot about RDAP, to experiment, and to gain operational expertise at hopefully a lower cost. Knowing that we always have WHOIS as a backdrop, we don't have to apply as stringent SLAs. So hopefully that can address some of Jim's concerns.

Let's just do that. It's simple. I think it's a lot less controversial. The operational profile is super useful as a reference. As

Stephanie mentioned, Google has already largely implemented RDAP. We have not just implemented it, but as of recently, we've open-sourced our implementation as well. So we hope that can be a useful reference implementation that's largely based on the operational profile. So when people come and look at that code or when we run it, we're probably going to at least have some instance that's going to use the operational profile, which is great. But other people? Afilias may want to use a different approach and they'll learn something. But I think that will be beneficial to the overall community.

So I would certainly encourage that as a path forward. I think it's a simple one, and I think it's one that we could make real progress to realizing the promise of RDAP without endless discussions about whether we need to bootstrap it into this policy or whether we need this operational profile. Let's just say, "Registries, make it happen," and rely on us to be innovative and to look out for the real opportunities. The RIRs are doing this without anyone telling them they have to do it a certain way, and they're realizing the advantages as a result. So let's give the registries the same flexibility and start moving here.

CYRUS NAMAZI: Thank you, Jordyn. We're actually past our scheduled time. Any last-minute comments or questions from the floor?

UNIDENTIFIED MALE: [inaudible]

CYRUS NAMAZI: Oh, we get until 6:30? Oh. On my calendar it says 6:00. 6:00 is happy hour where I come from. All right. So we have more time.

UNIDENTIFIED MALE: Are we happy here?

CYRUS NAMAZI: Well, we're getting there, actually. I think this is a very good conversation. Anybody else would like to chime in?

UNIDENTIFIED MALE: Oh, chat room.

CYRUS NAMAZI: Adobe…

[CHRISTOPHER BARE]: Yes. We have another question from Volker. This is: "Does RDAP provide differentiated access based on jurisdiction? For example, would someone with a U.S.-based law enforcement agency clearance have the same access to data held in the U.S.

and abroad? Would Syrian law enforcement agencies have the same access? Is differentiated access possible on a per-query basis?"

[JOE WALDRON]: RDAP just defines the mechanism. You can send authorization credentials along with your query, and it's entirely up to the server to decide what credentials entitle you to get access to what data. I'm not aware of anybody who has implemented that way, but they certainly could if they needed to.

JIM GALVIN: My comment about differentiated access gets to a comment that I made earlier. It's also, again, one my real concerns with this RDS group. Differentiated access is all about credential management. So you can have any kind of policy you want. You have a tool here now which will let you do whatever you want, but it's about the credential looks like. And somebody has to issue them and they have to be managed.

What does that mean? The RDS group is going to somehow create some policies that are going to decide what that is. That's what the community is going to come to some consensus about. Again, this is another one of those real sticking points. This is a serious conversation that's going to have to be had in the

community because there are all kinds of people who care about what this looks like.

It's not just law enforcement who is going to care about what kind of access they get. It's also about your intellectual property community – primarily copyrights and trademarks and that kind of thing. They care a great deal about what kind of access they get and where that comes from. Then you have anonymous users to compare against that.

What are the rules we're going to live by in this community and how are we going to manage it? I have no idea where these credentials are going to come from. Just think about the answer to that question first.

I'll channel Maxim a little bit here, as one who likes to talk about law enforcement. In other forums I've heard him talk about this: how do we know who law enforcement is? You're just a lonely registrar or a lonely registry in a small country somewhere, and some random person comes to you and says, "Hey. I'm law enforcement," or whatever, or, "I'm this person so I should get access to this service." How do you make all of that work? Where does it come from?

I'll leave it to Joe to talk about their experiments. Verisign has been experimenting with differentiated access.

JOE WALDRON: Thanks. As I mentioned earlier, Scott Hollenbeck has submitted the Internet draft to the IETF, as John mentioned earlier. I think it's through several version of the draft at this point, and that is something that he has built into the pilot that we've got. He'll kill me, but if anybody wants to experiment with that or see it, I can walk you through that on an individual basis with anybody. Or you can contact Scott and get access to that.

And Jim is right. This is the technical mechanism to be able to do that. Having a system that allows the creation of a user account that has certain authorizations and passes a token from some authorizing entity to an RDAP client is the technical mechanism. But all of the rest of "Who's going to run that? Who is it that makes a decision that the U.S. FBI gets credentials while some other entity that claims to be a law enforcement agency from a country that you never heard of doesn't?" is the difficult part that, for some reason, the protocol doesn't fix for you.

KAL FEHER: Kal Feher, Neustar. As we've heard, differentiated access is a feature that we can make use of with RDAP today if we were to deploy it in an experimental manner. If we do go ahead and just deploy it instead of having those strict implementation protocols and we do just deploy our systems as we see fit, we're

all going to make different assumptions about what we provide in terms of unrestricted access and in terms of the next year and the next year. Those decisions are almost guaranteed to be wrong when the Next-Gen RDS comes.

With that in mind, how are we going to manage that overlap? Because there will be clients that depend on our current or our original behavior, and then we're going to have a new policy, which we must deploy. Will we have to have a parallel deployment? Are we going to simply cut off those clients who rely on that original implementation?

So while I understand that RDAP is a very useful tool and I'm all for it – we're all very excited about building a test bed in Neustar – I'm a little bit concerned about how we manage this operationally, especially as we move into the policy elements of RDS in the future.

So if someone can predict, maybe, or tell me what we're going to do when the new requirements drop, I'd be very interested.

CYRUS NAMAZI: Thank you, Kal. Any other thoughts from anyone? Yes, please.

WERNER STAUB: Werner Staub from CORE Association. RDAP has enormous advantages because it is computer readable in terms of its content – it's parseable, and so on – and actually [inaudible] rather than presentation. But I think we seem to forget that presentation is a pleasant thing to have and it is implied as it is, for instance, in text output. You have a text output, the presentation is there. The way we've defined it is just the order and the keys. That was the presentation.

Now, as soon as we have people implementing RDAP, each one of them can choose their own presentation. There are many things we can do. If you copy/paste the result displayed, it could have a totally different result from one registry to another. This could be a nightmare for the users.

So I think, when we define the next version of the profile, we should have a minimum of standard, at least for the compulsory fields, with respect to presentation of the output.

CYRUS NAMAZI: Go ahead, Jim, and then we go to Maxim.

JIM GALVIN: Just to explain a little bit about the details behind this. What RDAP gives you is a structured response. You simply have, in simple terms, a set of tags and values. So you have a bunch of

data and you have a reference label that tells you what that data is, which is something you don't get in WHOIS.

In fact, the presentation is defined in WHOIS. It has to be exactly this way and look exactly in a certain order with exactly the following kind of tags that are displayed. You've lifted that requirement out of the system and you've handed it over to the user.

You said it would be a nightmare for a registry. It's actually not. It actually removes that nightmare. Now a user can do whatever they want with the data, and it's very easy to do that because it's all right there.

I do agree with you, though, that the other interesting discussion to have is about what data should be in that structured response. That becomes a policy discussion, which again is a decision to be made by the RDS group and has yet to be decided. The profile that has been developed is simply mapping what we do in WHOIS and just saying, "Let's do the same thing for right now in RDAP."

I don't really have any issue with the fact that's a nice experiment. I'm really just objecting to the idea that I should be required to do that and that it has to have the same production level of service that WHOIS does. I really want it to be an

experiment. That profile is a perfectly reasonable way to start, and I can also do things along the way as RDS let me do it.

So I just wanted to separate out the nightmare. It's not really a nightmare for registries here. This is a significant advantage to users.

WERNER STAUB: Sorry. Werner Staub again from CORE Association.

CYRUS NAMAZI: Go ahead.

WENER STAUB: I didn't mean it was a nightmare for the registries. It's a pleasure to have the flexibility of this displaying. It is a nightmare for the end users who have to make sense out of that data if each registry has its own pleasure if displaying it differently. Unless we have a standard, people will actually not understand what this data is.

It was very easy, in comparison, to read WHOIS output. In the future I'm not sure what it would look like.

JIM GALVIN: And again, browsers deal with this today. It's really not a problem. You just use your web browser to make the query and you get back a response. Browsers can already parse it out and display it for you.

So, again, it's not even a nightmare for the user. There's an advantage here because now you can create all kinds of interesting applications to take that structured response and do fun things to it for you. But browsers or your favorite web client will already display this data for you, and it will be readable to you.

CYRUS NAMAZI: Thank you. Maxim and then Jordyn.

MAXIM ALZOBA: Small clarification to that. Actually, currently we have WHOIS and web WHOIS. What's on web WHOIS is quite well-defined because we have to show computers the same things. With browsers, some of them actually just give you the structure. If you're not good at reading JSON, you might need something. Even a simple copy/paste to the parser is not for the average user, I remind you.

So we might need to have at least some set of recommendations which will make life easier on how to reflect web RDAP – how do

you call it? I don't know. Because we have to take care of the average user. Human readable interfaces are not gone yet.

Thanks.

CYRUS NAMAZI: Thank you. Jordyn? Then I'd like to hear from Mark on the phone, and then we'll go to Francisco.

UNIDENTIFIED MALE: [inaudible]

FRANCISCO ARIAS: Thank you, Cyrus. Just quickly to what Maxim said, I just wanted to remind you that the requirement for web WHOIS still is there for both registries and registrars as [Werner] mentioned before. So that is for those end users that are less technically skilled, let's say, so they will still have that common look and feel on the output.

CYRUS NAMAZI: Thank you. Jordyn?

MAXIM ALZOBA: And you can [differentiate] users by technical knowledge. They will see the old kind of data – the web WHOIS guys – and those

who can read JSON will see new things you added, like international things. It should be the same, actually. So we need to think about this.

JORDYN BUCHANAN: Thanks. To react to what both Maxim and Werner said, I think it is really important to highlight was Francisco just said. Until the Next-Gen RDS completes its work, WHOIS as we know it is not going away. Everything we're used to today, in terms of both the data access methods and the data that's available, is still around. Anyone that is using that data today has access to it.

But in reality, the situation is kind of the opposite of what Werner is worried about. If there's one thing that WHOIS is not very good at, it's providing a consistent way of accessing data. This has been somewhat cleaned up by ICANN over the past few years, but previously, different registries or registrars did format the data how they saw fit. I think this was one of the things that the RIRs were getting at in terms of improvements.

RDAP provides an actual structured mechanism that makes it easy for both machines, and then, by virtue of machines that are capable of parsing it on behalf of humans, for humans to get really consistent access to the data and, as Jim says, play around with it in interesting ways.

So I think we take a big step forward in being able to access and work with the registration data by having RDAP. The fact that, yeah, we'll have a tale of two cities, I guess, where some people that are taking a look at RDAP will have better or more interesting information than others is exactly why we want it. We want to be able to get more interesting data and look at it in new ways. That's good.

Anyone that is dependent on the way WHOIS works today can keep using it until the Next-Gen RDS finishes that policy process and decides if there's anything that needs to change about the way that we interact with these directory services.

CYRUS NAMAZI: Thanks, Jordyn. Let's go to Mark on the phone and then Kal.

MARK KOSTERS: One of the things that I'd like to mention is that internationalization is actually one of the things that's going to be one of the biggest wins out of all this. We're all speaking in English here, but there's a good portion of the world that does not, obviously, and does not use the English language. WHOIS as defined back in who knows when – 1980? – only talked about information being displayed back in ASCII, which takes care of most of the Latin-based character sets but does not do anything

for other character sets. So this is a big win because our RDAP has that already built in.

CYRUS NAMAZI: Thank you, Mark. Kal?

KAL FEHER: Kal Feher, Neustar. At the risk of bringing the tone down, what exactly are the next steps after this meeting?

CYRUS NAMAZI: I was afraid you were going to ask that. There is a public comment period open at the moment until sometime, I believe, in early December, Francisco? Something like that.

UNIDENTIFIED MALE: December 12th.

CYRUS NAMAZI: It's December 12th. So the objective of this conversation, together with the public comment forum that's open, is to really continue to have this conversation to help us decide what we're going to do with RDAP. Jordyn had a very eloquent suggestion. There are other suggestions on the table. Ultimately, these should really, I think, be challenged to the public comment

forum that's open at the moment, where we can all analyze it, look at it, and then post it for everyone to see.

The objective for ICANN is not to just blindfoldedly impose contractual requirements that benefit no one and impose operational hardship on registries. If there's no element of public service to it, I think we need to take a step back and see if there is flexibility in there for us to fine-tune what needs to be done within the confines of what ICANN is empowered to do, obviously, and make sure that we take the right steps as we evolve the ecosystem for better systems, for better services, retiring older services, and cope with new regulatory environments. So that's the objective.

Does that answer it for you, Kal?

KAL FEHER: Yeah. Thanks.

STEPHANIE DUCHESNEAU: Just as a clarifying question, can I ask if you're referring to the public comment period on the CL&D policy – the Consistent Labeling and Display – and there's not something separate open related to the RDAP itself that's not reflected on the comment page?

CYRUS NAMAZI: Thank you, Stephanie, for that clarification. That is correct. It's the Consistent Labeling and Display public comment forum. Marc?

MARC BLANCHET: Marc Blanchet, Viagenie. It seems to me that, if we wait for deploying RDAP in a real sense – production and real use – I'm getting concerned that, at the end, WHOIS will continue forever and we will put additional stuff and requirements on WHOIS because that's the only one being deployed. Therefore, it seems to me that we are at a pretty good consensus that RDAP is the right vehicle for anything in the future that'll fix all the problems we're having.

By the way, we will have more as we go. For example, variance in domain names will require a structured response and stuff like that. So I'm getting pretty concerned that, if we wait and delay the deployment of RDAP, we will end up continuing to overload WHOIS with all kinds of stuff and we'll never get out of this mess.

CYRUS NAMAZI: Thank you, Marc. In fact, that's a very good comment. I personally also struggle between the benefits of the academic exercise that some of the people here in the room are suggesting

versus the diminishing returns that you get by continuously experimenting with something and where you should do the transition to diverting your resources and operations to the more modern systems, so to speak, in this case, RDAP.

Any other questions or comments from anyone? Any last closing remarks from my distinguished panelists?

None?

[JOE WALDRON]: Okay. I'll make one.

CYRUS NAMAZI: Joe and then Marc, please.

[JOE WALDRON]: I'm sorry. It's just that I said, "Okay. I'll make one." Somebody has to, right? I'll key off of what Marc was just saying down there at the end about deploying RDAP.

I've been a very strong advocate of RDAP for a long time. My real fear in this process is just the obligation and/or accountability that gets put on you. That's the concern that I have.

I would like to find a way to deploy RDAP and begin to use it and have it be an important part of what we have. I just want to be

careful. I'm really honestly just not quite sure how to do this. I'm not a lawyer and I don't even like to pretend to be one or to play one on TV or even up here in a panel session. But it would be nice to be able to use it and see some of these benefits that we can get out of it and what we can do with those benefits.

The first decision that will come out of Phase 1 in the RDS Group is to speak to the issue of the purpose of registration data. We currently have a draft purpose statement, which we're just using as guidance at the moment. It's important to recognize that it's not a finished product.

One of the things that I find interesting is that there is actually no black and white documentation on the purpose of registration data. We all think we know what registration data is. We all think we know what it's for, and there's a variety of different communities that think they own it. That's the way it is. So we have a public WHOIS that gives away virtually everything, except for the fact that some people sneak and they put garbage in there or you don't get responses.

But I really would like to have RDAP so that I can begin to consider what other choices I might make in what's displayed and what's returned. Maybe full, anonymous access is the wrong model, but we can't know that until this Phase 1 completes, tells us what the purpose of registration data is, and it comes out of a

full consensus policy process because then it's a done deal. To me, that's an important marker.

So we're worried about delaying things for years. I think I would be much more comfortable with the things that we could do with RDAP. I might even buy into being accountable for deploying it if I had an answer to that question because then I'd know what I'm dealing with and I'd know what to say to some of the people who keep telling me that they have to have everything because they've always had it.

Thank you.

CYRUS NAMAZI: Thank you, [Jim]. Marc, you get to have the last word.

MARC BLANCHET: Okay. During the IETF work, we actually implemented a test suite for testing RDAP server implementations. We had about ten different implementations of names and five different implementations of IP addresses/registries that tried our test profile. So I think that shows pretty clearly, with the major ones that we all know, that it's being implemented – not in production, obviously. But we're far from an experimental protocol that nobody has started to work on.

CYRUS NAMAZI: Thank you very much, Marc, and all the panelists and the participating audience. I think this was a very useful conversation, at least for me. And I don't profess to be an expert in the field.

With no other comments, I thank everyone for taking the time to be here this late in the day. This session is closed. We can stop the recording. Thank you very much.

[END OF TRANSCRIPTION]