

ICANN
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GNSO RySG Part 2 Understanding RDAP and the Role it can Play in RDDS Policy
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Rick Wilhelm: Good afternoon everybody. This is Rick Wilhelm from Verisign and this is "Understanding RDAP and the Role it Can Play in RDDS Policy." This is a follow-up to a panel discussion that we had at the last ICANN meeting. And so we're going to through - the setup is not exactly panelesque.

Your panelists are disbursed all around the table. There is room at the table if you want to come sit up front. If you don't, you're certainly welcome to stay where you are. We've got a number of conflicts on the schedule so our attendance here is not what it was at the prior meeting.

But we're going to go ahead and charge on in. And here's our agenda. I'm Rick Wilhelm. Eduardo Alvarez from ICANN staff is going to talk about the implementation timeline. And then Jim, Roger, and Sarah are going to talk about some other topics.

I think that Sarah has the pilot in relation to EPDP and TSG. Jim Galvin has a preview of Phase 2. And then Jim, Roger and Sarah from Afilias, GoDaddy and Tucows, right? Yeah, Tucows. I keep forgetting that – and Tucows respectively are going to talk about registry and registrar perspectives. And then we will have time for Q&A.

And this presentation was not aggressively rehearsed so these are all very much estimates. Just a forewarning. Okay we'll chug ahead. So we're going to give - got some odd formatting stuff going on with the slide so you'll just have to kind of guess at what some of those words mean. It's not a new language.

Sue Schuler: Let me load it up in the PDF.

Rick Wilhelm: We're going to load it up in the PDF, just two seconds here. So this is a summary of the timeline that we had for the RDAP pilot. It talks about it - here we go. We'll get this loaded up and this'll be fantastic. We started this pilot a ways back, back in – here we go – back in 2017.

And the pilot program was originally set to begin in 2017 in September and end in July of 2018. While the pilot was going on, as many of you in the ICANN community know, the temporary specification became effective. And then that changed the goals eventually of the pilot to changing the output that would be - that the RDAP would be producing. So that changed our work as it went on.

There was a pilot – a profile document, a set of profile documents – published for public comment in 31 August, at the end of August, in 2018. And that period, public comment period closed 40-some days later. Staff report was published at the end of December.

And then the pilot working group iterated the profile documents. Those were then published again on - little bit concurrent with when ICANN published the legal notice for launch of RDAP. That was on 27 February. And that was issued with 180-day implementation timeline.

Those of you that have been close to this know that 180 days is different than the 135 that was originally in registry and registrar contracts. That was a request from the Registrars Stakeholder Group which asked for a little bit more time.

The Registries Stakeholder Group seconded that and ICANN org granted the extra time period. So that has RDAP required to be live on August 26 of this year. Those are some milestones out there.

Internally the RDAP pilot working group had these milestones that you can see. There was originally the RDAP profile was just one document. And then early in May of 2018 the pilot working group published a dual document profile structure that exists right now.

This has what's called a technical implementation guide and a response profile. The purpose of these two different documents is to have one that is designed to be relatively stable in the face of policy changes – that would be the technical implementation guide – and one that is designed to be flexible and to change when policy changes. That would be the response profile.

So that capability has been exercised internally within the RDAP pilot working group where originally the working group put together and had a version of the documents that implemented the cookbook. Those of you in ICANN are familiar with the cookbook that was there for GDPR, GDPR Cookbook.

And then it was iterated later to go forward with a temporary specification. During that time, the technical implementation guide was relatively stable and the response profile was the one that changed.

Then in 31st May was when the pilot working group published that first version of the profile that implemented this temporary specification. That had the

temporary specifications rules for redaction and limiting of output to be compliant with GDPR.

And then on - we had these other two milestones up here. These are just internal milestones before the external publication, both in late August and late February. So that's sort of how that timing worked.

Okay, RDAP pilot working group, it is a pretty wide-ranging discussion group. We had got ICANN-accredited registrars, gTLD registry operators and ICANN staff also participated in this. We met largely weekly throughout the year.

When we were asked to increase our - basically make a push to get this thing published and done with, so we worked and switched to a twice-a-week meeting tempo in late December up through mid-February. This greatly increased the group's output because when you're meeting twice a week you don't have time to forget what you've been working on, as many of you here know.

So this is a set of things that were discussion topics that we spent a lot of time on. IDNs, while they seem like they should be relatively simple, just getting it straight and appropriately documented how the system should handle A-labels and U-labels, getting us in both requests and responses, getting ourselves aligned to where we are appropriate with regard to universal acceptance was important.

We had a lot of discussion over what happens if you get things like a U-label to the left of the dot and A-label to the right of the dot and what happens then. Spoiler alert, it doesn't.

And then we had some other - plenty of other discussions about situations around vCard and jCard. One of the things that we actually had to do as a result of this work is start an RFC update for the fact that the vCard and jCard standards didn't have a mechanism for country code.

And of course our standards in around ICANN deal with country codes, not country names. Also the temporary spec had something called an e-mail contact URI that was required. And of course an e-mail contact URI is very different than an e-mail address.

So we actually had to change an RFC to implement this stuff, which I didn't think we were going to have to do when we started. That RFC goes - that RFC change goes before (IESG) - whatever it's called - telechat, is that the term? Goes in front of the (IESG) right after Prague. So that should be there.

There's also been a lot of discussion in the registry/registrar community about the challenges and difficulties technically of working with the vCard and jCard standard and how it's not exactly the best bet - if I can put it diplomatically - for what registries and how registries and registrars represent addresses.

So it's still not determined exactly what we're going to do about that because it's a non-trivial thing to change because these things are memorialized in RFCs.

There was some discussion about DNS sec and if it should be should or must related to the names where RDAP is hosted. Currently in the profile it's should rather than must. It had to do with the notion of a contractual requirement as opposed to a statement about security since some issues that we discussed related to certificates and the requirements for the CA and again related to should or must.

These ended up being I guess you might say technically a bit more relaxed. And this is largely to allow for operational flexibility on the part of the operator. And here we were largely oriented with keeping in sync with existing practice on WHOIS because we're trying to get RDAP up and launched and not put barriers in front of it.

There's another area where we're probably going to have to do some RFC work. It's related to the registrar bootstrap URL registry. Here's what this is. This is currently a mechanism whereby the - if you know the TLD you can go to a place on the Internet and find the RDAP server for it but using an IANA, well-known IANA file.

Such a thing does not currently exist for registrars and to be able to find a registrar's RDAP server. And so there's currently work underway to change that to provide a bootstrap registry. That's what that term is called.

Not surprisingly, the key there that you look it up by will be the IANA ID of the registrar. So that work is underway. It's going to take a while to make it through the IETF. As an interim solution, ICANN is going to be hosting a file to allow the things to get off the ground.

As a whole, the group spent a lot of time working to make sure that we were not making policy, that we were working on technical mechanism and implementing policy and not making policy. So it was a fair bit of time that we spent around decisions related to that.

And then were a lot of other just topics that we could discuss as you can imagine when you meet for months and months once a week or twice a week. So here's a list of the pilot participants. I think we have everybody up there.

If there's an entity that was on that that participated in the pilot that I missed, please contact me and we will get you on that list and we will update the slide. It's certainly an apology if we left you off of there. Did we not get you on there? Ooh, there we go. Okay, we'll update this slide. Ouch, so quick. I was supposed to at least get off the slide and wait until e-mail. Man.

And then we did some - there were some clients that were billed. ICANN billed a client. We're going to see a demo of that. That's going to be fantastic. (Gavin)'s not here. He's with the TSG but he billed a client also from CentralNic. The folks at DNS Belgium were doing some work on that.

We did a bunch of authentication testing with (Mark Lanshay) and (Tomo Fumi) from (Viagenay) and DigiCert that we did also at Verisign. Shows you a lot of folks put a lot of long hours into this. That really made a lot of improvements throughout overall, especially the folks at Tucows.

Let's see, I think that's the last slide here. So these are some links that are only interesting if you're looking at the slides and clicking on them later. So you can get with those and we'll move on to the next part of the presentation. (Unintelligible)? Tom's got a question. We'll be right to you.

Tom Barrett: Hi, Tom Barrett for EnCirca. I had a question a little bit about the scope and in particular you mentioned IDNs up here. We also have some WHOIS contact objects that have - both have INT as well as LOC formats. Is that - and of course we only can publish one to the WHOIS today. Is that within the scope of what you've looked at for RDAP? What are the plans there?

Roger Carney: I was going to say I'm not sure I understand the questions. What's an LOC format? Am I just missing something?

Tom Barrett: No, the EPP where you can mark it international (unintelligible).

Roger Carney: Oh that stuff, okay. There was nothing specific that we did. We didn't - you know, it did come up and we didn't avoid it. I mean, RDAP does work with either one of them, so...

Tom Barrett: Just (for everyone), so we have some registries for example that say supply one versus the other, some that want both, right. And so I'm just wondering if that's been accounted for within RDAP.

Rick Wilhelm: We can take it up and we'll discuss it. I think it just works. But I don't know - I honestly - and Tom's grinning for those of you that can't see the video. I think it just works because it's been structured to do that. But I don't know that that mechanism has been exercised because we didn't spend a lot of time on internationalized contact data.

We spent our time related to internationalization around - mostly around IDNs as opposed to internationalized contact data. I mean, fair question. We'll take it - go ahead Roger.

Roger Carney: Sorry this is Roger. I forgot to mention that. It'll be server dependent really because the server will get to choose what they pass back. The RDAP will allow it to be passed back so it's up to the server at this point.

Jim Galvin: So this is Jim Galvin for Afiliias. Yeah it's all just part of the schema. So, I mean, as long as it's defined in there, and we didn't do anything special about the schema. So it should all just work. I like Rick's answer. It should work in spite of the fact that Tom is smiling at us like okay.

Rick Wilhelm: Thank you chat. And we're going to - thank you Tom. And we're going to pull a question off the chat from Dan Wright at pair Networks. Thank you Dan.

Question: "Has there been any effort made towards providing validation tools for registrars that will need to implement RDAP?" I believe that there is a validation suite that (Mark Blanche) has built with (Ed Viagenay). I don't know how up-to-date it is. Roger may have some information on that?

Roger Carney: Yes this is Roger. I just talked to (Mark) actually earlier today about it. And they are working on getting it updated to this new profile that's been published. It is currently running on the original profile. So it'll be some time before they get it updated to this current profile.

Rick Wilhelm: Very good. Thank you Roger.

Edwardo Alvarez: Okay so now this is a section yet to cover part of the timeline although Rick already covered most of the key milestones on RDAP implementation. We still want to reveal the timeline of all of the RDAP work back when these efforts began up to where we are today.

Back in September 29, 2011 SSAC published their report, SAC051, where they were suggesting that replacement protocol for access to registration data was needed. And the board accepted that resolution - I'm sorry, the board resolution (unintelligible) SAC51 on October 2011, approximately a month later.

Then in June 2012 ICANN published the roadmap to implement SAC051. And (IETF) working group rejected it. A few years later, March 2015, the RDAP (RSP)s were published in the (IETF). In June 2015 work began on the first version of the RDAP profile trying or aiming to capture this policy requirement as well as the technical requirements that need to be supported by RDAP.

In almost a year later - well a little over a year later - July 2016 the first version of the RDAP profile was published. Then in August, 9th of August 2016, back when there was work going on the policies for consistent labeling and display there was a request for reconsideration received by ICANN from the Registries Stakeholder Group asking to remove the RDAP requirement from there.

And then on February 2017 the final consistent (level) and display policy was published without the RDAP requirement. Then on May, 25th of May 2017 the test spec became effective with the requirement to implement RDAP as

long as there was a (com) profile (S-Lay) and a reporting requirement for registries.

After that, in August 1, 2017, ICANN received a proposal from the Registries Stakeholder Group supported by the Registrars Stakeholder Group to implement RDAP. And then a month later that proposal was accepted which gave a start to the RDAP pilot.

In August last year, the proposed gTLD RDAP profile was published for public comments. And then the official version of the RDAP profile got published on February 27 this year. Recently along with ICANN's legal notice to - with the requirement to implement RDAP, which leaves the deadline for implementation for August 26 this year.

You may have seen some of this like in other sessions. There was also mentioned about Webinars that are scheduled during the month of April this year or the technical themes that are going to be implementing the RDAP service for registries and registrars. So you'll be hearing more of that too.

It also was covered by Rick earlier the registrar bootstrapping mechanism since ICANN was asked to come up with the central repository to support the bootstrapping mechanism for registrars. That is also in the works. It's expected to be available by the end of May this month. And it's meant to support the requirement that's part of the RDAP profile for registries to provide the link to the registrar RDAP servers. That's it for me.

Sarah Wyld:

Hi there, I'm Sarah Wyld. I'm with Tucows and I was asked to speak a bit about how the EPDP and the technical study group on access to non-public registration data relate to the RDAP working group. Apologies if you've heard about this already in a few other meetings this week. And also if you were anticipating for this to be presented in interpretive dance, you will be disappointed.

So we have three groups all working on registration data services at the same time. The EPDP has modified the policies governing what registration data should be disclosed under different circumstances. And that work will continue in Phase 2.

The RDAP working group here has provided – as we heard – a profile and implementation guide. So this tells registrars and registries how RDAP works and how the RDS responses should look. This work began pre-(GBPR) but is now grounded in the temp spec.

And we're creating a framework that will – as Rick said – accommodate future policy changes including what comes out of the EPDP.

The technical study group is working on how to use RDAP to provide a centralized system for the disclosure of non-public registration data to authorize third parties.

This RDAP working group has been very careful, very conscious of not making policy changes as part of the profile or technical implementation guide. So just to share an example, in my own company's final review I had one of my RDAP developers look through the profile before we all signed off on it.

And (Travis) caught an issue where the wording around how to indicate that a domain name's data is redacted due to privacy reasons, it was written in the profile as a must exactly match this text. And actually the policy says it should be similar to that text. So this is an example of something that we corrected before the profile was shared with the community.

There is some concern around the work that might come out of the technical study group. And this is because it stands outside of the multi-stakeholder policy development process. And it is instead a small group of men selected by a member of the ICANN board.

The staff role within the TSG is unclear as some staff are participating as well as providing support. That said, I'm following the mailing list and so far it looks like they are also not creating new policy, which does need to be left to the EPDP.

And so as long as they stick to their charter I see less of a concern. But the existence of the group does raise some concerns about how their results are intended to be used and which future policy will be affected by this small group of people working on it.

There's also some lack of clarity around how the conclusions that the TSG comes to will be operationalized. So according to their charter, ICANN is the only group that may authorize access to non-public registration data. And so a contracted party who actually holds the data would provide that to ICANN who then sends it through to their requester.

But this assumption may not be warranted and will affect the conclusions that the TSG reaches.

Another question is who will actually build this system that the TSG is recommending for use to track and respond to requests. There is a significant workload to implementing these requirements around tracking and fulfilling. And we heard that at the tech ops meeting on Sunday this question of who would build this system is not addressed by the TSG group.

The purpose of it instead is for ICANN to take this model to the European Data Protection Board to ask it what would be acceptable and if it would reduce liability for the contracted party.

There's another sort of open question I find interesting. What happens if ICANN authorizes a third party or authorizes disclosure of data to a third

party but the contracted party who holds the data disagrees with that authorization? Or if the data subject themselves disputes it and the disclosure is found to have been improper.

So ICANN has said they will not indemnify the contracted parties. And as a result this is a big open question. It's a concern. So there's a lot going on around registration data services. How it all shakes out remains to be seen. And I would encourage everyone to watch closely all three of these groups. Hope that was helpful.

Rick Wilhelm: Thanks Sarah. That's great. Preview of Phase 2, Jim want to offer a few words for us, thanks?

Jim Galvin: Yes, Jim Galvin from Afiliis. So as always, there's lots of details that are involved in some of these things. But what we've come to agree on is that there are two principal areas that we'll be focusing on during this Phase 2. One of course is tracking all of the moving parts that are in progress right now.

We have the EPDP Phase 1 report and we do expect that there will be some technical changes as a result of those policy recommendations, what comes out of that. So we're going to have to update the technical profile that we have to match the requirements of those things.

And there's likely to be other related activities. It'll be interesting to see what happens with the ESG recommendation. And of course as Phase 2 progresses we'll, you know, track all of that too.

The second thing is a work item which we had originally thought we would do during Phase 1. And we deferred in part for time but also because as the temporary specification came into existence and discussions about access models and, you know, all of the EPDP stuff came to bear, it seemed appropriate just to defer discussions at the moment and wait for a bit more information from the community.

And that is to talk about authenticated access and the technical issues that go with creating an authenticated access model. So we'll be spending some time focusing on that and examining the options there and creating similar to what we did in Phase 1 a technical implementation profile, technical guidelines for use by the community as far as implementing that is concerned. Thanks.

Roger Carney: Just I think I saw (Dennis). Yes, (Dennis) is here so you mentioned the IRT. And I know (Dennis) was trying to count back earlier in the sessions that when the IRT work was actually going to complete. So it looks like hopefully sometime during the summer. I'm not going to hold (Dennis) to those dates, but...

I wanted to clarify and maybe explain why the reason the two documents do exist. I don't think we're actually going to technically update the response profile that we have today. We're going to create a new response profile so that two response profiles will be living at the same time, and later on maybe more.

But this will allow the - if you've heard the bridging discussion talked about, that contracted parties can continue to use the temporary spec through next year, early next year, which they would use this original profile.

Or they can move to the new policies which would be a newly created profile that we would have to do hopefully by the end of August to match what (Dennis) is trying to get done. So I just wanted to kind of tie those things together for everybody.

Rick Wilhelm: Very good. Thank you Roger and that's a great point. And there is technical mechanism inside the documents themselves to allow the co-existence of both of the response profiles in the ecosystem at the same time.

We're now going to go to registry and registrar perspectives. I'm not sure - it looks like since we've got registrars' perspective up I think - I'm not sure if it's Roger first or Sarah first. It's Sarah first; there we go.

Sarah Wyld: Hi, thanks. This is Sarah again. We at Tucows have implemented RDAP. So we transitioned our registration director services to the RDAP back end but we are still formatting the public-facing response to look like a WHOIS response. And we are of course still running the Port 43 WHOIS server as required.

Somebody asked for stats, so I can say we have run two platforms. So for open SRS the average response time is 100 milliseconds. (Enon) platform we're at 1500. There's a difference there but both are well within the SLA, which is 4000 milliseconds for 95% of queries.

We have also built a tiered access directory using RDAP. So this gives us the ability to filter results based on who is the querying user. And it lets us comply both with the applicable data privacy laws and with ICANN policy. And we can make changes to that as policy is updated.

We have shared tiered access stats on our blog and I know it was mentioned earlier this week so I won't get into a lot of detail. But I will say we've received since last May over 2100 requests for non-public data. Twenty-five percent of those resulted in the appropriate registration data being provided and to find out what happened to the rest you should read my blog.

So given that information, the community I think should keep an eye on the TSG's recommendation surrounding access and accreditation. If we have found that 75% of requests are invalid or should not be provided, the information they're looking for might be that something needs change, yeah.

The biggest area of feedback that I've had from my RDAP engineering team is around the use of jCard. jCard I am told is not itself a format. It is the use of JSON format to display a vCard. It is an unintuitive structure, very complicated with areas that are not used in this context and difficult to fit registration data into it.

So this is something that I get to hear about from our dev team and the RDAP working group may address in the future. Thank you.

Rick Wilhelm: Very good. Thank you Sarah. And then Roger please.

Roger Carney: Thank you, this is Roger. I keep forgetting to do that. And as you can tell, I stole the last blip from Sarah's slide except I changed the may to a must. It's definitely something our developers didn't even want to start working on this because of the head-banging they did to get the vCard and jCard in there.

So whether or not - I suppose I want to give some good news. Our developer took two days to stand up this RDAP implementation. And I think that was a long couple lunches. So hopefully it doesn't scare people off. It is very straightforward.

If you don't have someone that can do the coding I think that you could probably find this fairly easily. So it should be fairly straightforward for most people. I put on some links to our current RDAP implementation.

Again this - you know, he spent a couple days doing this and it's not that he did all the security and the throttling and logging and everything that goes along with production systems. He did stand this up as a test site, so - but that's all I wanted to share. Thanks.

Rick Wilhelm: Very good. Thank you Roger. And Jim.

Jim Galvin: Thank you. Jim Galvin from Afiliis. Actually I think I might be the only one from the registries who put a slide in here, didn't I? Yeah, (Tu)'s nodding yes to me. So in fairness I just want to comment there were quite a few registries involved in this effort.

And I don't think I'm overstating or overstepping by suggesting that we all had a positive experience and demonstrated that we can put this together and make it work.

I've put up here a link to our particular implementation. You can do a domain query on Afiliis Dot Info. Dot Info is the TLD that is supported up there and it responds with public information as currently, you know, described by the temporary specification.

You know, I decided at this point when I was doing the slide because I still have to see their slides before I put this up there, that it wouldn't be

necessary for me to list all the technical challenges that may or may not have existed in the future work to come and figured I would just say we're all ready for Phase 2. We're anxious to get started.

And I think it's fair to say that all of those who participated in Phase 1, they're going to continue into Phase 2, speaking for other registry operators. And, you know, that's a good thing. So we're all trying to align with the policy efforts that are, you know, driving themselves, investing a lot of time and effort. And we'll all be ready. Thanks.

Rick Wilhelm: Thanks Jim. Yeah, and we of course at Verisign, we've been involved in this. We've had Com and Net pilot servers up for that for a long time and Dot CC and Dot (TB), which is to two ccTLDs that we operate. Both of those, if you Google Verisign RDAP you'll be able to find those pretty quickly.

While I was doing some research for this presentation I actually found a presentation that Verisign had done at ICANN 54 tech day, so regarding federated authentication for ICANN. So that was a bit of a throwback. Yeah, so we've been at this a while.

Let's see, so do we have - do we have the ability to do a client demo Eduardo? Is that possible or is that beyond - either does that cause things to melt from a presentation perspective?

Sue Schuler: It will - yeah. It'll show in the room. It will not show in Adobe. So the people that are participating remotely won't see it.

Rick Wilhelm: Okay. So if we can do that, that would be - how are we doing for time? We have plenty of time, okay. So we'll work on doing - do we need to flip over to be able to do a demo? How does that work? Let's do it on your... We're going to make some sausage here. What could possibly go wrong?

If anybody has any questions while we're causing a short in the electrical system for the KICC building please come to the mic. There's Quoc who was part of that pilot group.

Quoc Pham: Quoc here, Neustar. Just to answer (Todd)'s earlier question about internationalized data within the contact information, it should just work. But the response coming back from a domain query and if it does include the entity Dot Info, if exposed just shows the contact as is.

The jCard - oh it's a jCard - yeah, the jCard specs don't have things where you can have more than one address because as you know a contact object has multiple - you can go (unintelligible), whichever method you want.

So it doesn't have the facility to have two address fields in there, or two address sections I should say. So I think that might be a challenge for us, for (unintelligible).

Man: Quoc, that'll be on the same entity though, right?

Quoc Pham: Yes, on the same entity. So Quoc Australian address and address in Vietnam or something.

Man: The RDAP could return two entities.

Quoc Pham: It could return two entities. You have the challenge of potentially have the same handle repeated twice. And I know what that may look like, but yeah.

Rick Wilhelm: Very good. Thanks for that Quoc. Appreciate it. Not sure how we let you be hiding back there behind Roger but - sneaky. While we're working on getting this set up, I think that the dates for the Webinars for registries and registrars are April 10 and 11. I think invites for those are going to come out shortly, so stay tuned for that. And here's the ICANN RDAP client.

Woman: (Unintelligible)

Rick Wilhelm: And we're going to - okay, here we go.

Man: Rick are you going to do a play-by-play for those people online?

Rick Wilhelm: Um... Just kidding. It is showing in Adobe. Okay so mercifully for everybody here I don't have to do the play by play. Okay, Eduardo we'll give you the mic and you can tell us what you're doing.

Eduardo Alvarez: Sure. This is sort of improvised. How do I make this bigger?

Man: Windows (unintelligible).

Eduardo Alvarez: Ah, there we go. Is it better? Is it the same as we started? Just goes from...

Sue Schuler: This is also a touchscreen so you can just move things.

Rick Wilhelm: Just go with it.

Eduardo Alvarez: Yes.

Rick Wilhelm: Yes.

Eduardo Alvarez: Okay. It's really very basic client. It's all made in JavaScript so everything happens in the browser of the end user. It doesn't really go into the (unintelligible) server that's hosting this code.

But in here we could do – oh just clarify it's supporting only the TLDs that were listed as part of the RDAP pilot and whoever has signed up in the IANA bootstrapping mechanism, which is only a handful of ccTLDs – basically (Cominet) and some other - just a few of the TLDs. Not a lot of them registered yet from the new gTLDs.

One of the test TLDs that we have was actually literally Dot Test. So I can just do a - actually I have some samples here in the help. I'm just going to (unintelligible). I think this first one is a good example. So if a user wants to try an internationalized domain name, they can just type it there.

We have the TLD there that will let the client know that it needs to go look for the Dot Test RDAP server. And when doing the lookup – hopefully this will work – it just connects to the server that is assigned to the TLD. And it will just retrieve the data.

Now this is data that has been processed by the client to display it or attempts to display it nicely, not just adjacent because what we receive from the server looks more like this which is the JSON formatted content. But we have some dates in there, formal events, contacting the form of entities and so on.

But then the client can have whatever logic it needs and then just present the values that it wants, whatever - in any form that it needs. So we can see here the A-label of the domain name, the (UD) code version of the U-label that we look for.

If we are to look for the A-label version of this, we're going to be getting the same output as well. And now I know that these test servers - it's not like we memorize it but this is the exact same result from before. This – the (Dot Test) server also has a port for authenticated lookups using a detailed certificate.

However they're not in this – this is a borrowed laptop – they're not here. It's real easy to unload if you want to try. The instructions are in the help to install the certificate. It's a test certificate that was created for the profile. If we want to do a different test for example of other TLDs, you mentioned Dot Info is in the bootstrap? Or we can just do one of the ones that (unintelligible).

For example if we try Dot Com with whatever name was we want, I guess make that (unintelligible). We'll obviously get a (unintelligible) response from the Dot Com RDAP server by Verisign. This is the information that they're publishing. We can see the sponsoring registrar, domain servers.

This is the answer, just Verisign is running it today. Right now the client is not displaying notices or remarks. But they're here. And it can be easily (accented) to just show them these messages in any way we want.

One other functionality that I remember or I know that Verisign RDAP servers have is the open ID support with some testing of identity providers, just for the sake of the proof of concept.

So if we type a supporter identity authentication using Gmail accounts, so if I try - well a valid Gmail account and I authenticate successfully I would get a slightly different response. But because it's not authorized I'm still going to get redacted data. But we can give it a try.

This is an account that I know we used for them earlier. By providing my user identifier and sending it to ICANN's - oops, this is a popup blocker here. I'm sending it to the client. I'm just going to allow it this one time. The RDAP server is doing their...

Sue Schuler: Because you're trying to give them the Gmail (unintelligible).

Eduardo Alvarez: I can use another.

Sue Schuler: Okay.

Eduardo Alvarez: And then another. By the way it's not a good idea to use personal computers. But if I am any user with a valid - if I were to use any one of those Gmail accounts (unintelligible). The point is just to get a successful authentication with Gmail. I hope I am getting the password correctly.

As soon as Gmail authenticates that this is the right credentials, then it sends me back to Verisign's RDAP server. I don't know if I can make it bigger. And then just display the JSON. This is not being processed in the client right now. This is just what the server is returning. This is some work that needs to happen. Let's see if I can - this does not work.

Well anyways, we're seeing a little bit more information that we used before when we did the request. And that's basically the - a very simple demo. This can be extended further but...

Man: Scroll down a little bit (unintelligible). Scroll down a little bit.

Eduardo Alvarez: So scrolling down...

Man: Just scroll down to the (unintelligible).

Eduardo Alvarez: Oh, the (unintelligible).

Man: I like that.

Eduardo Alvarez: Oh, this is...

Rick Wilhelm: So here's what's interesting. So now - so if you look right below what's there - and this is just something to highlight - the thing about RDAP, WHOIS is easy for humans to read and awful for computers to parse and also to make queries.

But if you want to formulate a query around a name server, any name server, and you want to pull data out of it, out of the RDAP pilot server at Verisign labs, if you have a hard time reading what's highlighted in blue, just look two lines below and you can see that URL, (RDAP-pilotVerisignLabs.com/rdapv1nameserver) – that's key word there – slash and then whatever the name server is.

And if you pound - if you type that into your address bar, it will give back a little blob - it will give back a blob of JSON that is information about that object.

Similarly, when the query went against the domain name, if you substitute the word - instead of name server, if you say domain and you put the word (NIC.com) it would also give back that. So we're showing queries there with that UI. But you can also - those URLs like that work, right.

And so this mechanism, this is the way that Web applications work in your e-mail and your browser and stuff like that that makes RDAP so much easier to deal with for programmers, which is why as registries and registrars get into this, they're going to find RDAP so much better than WHOIS.

And you're going to be excited about standing up your RDAP servers. You can eventually be able to turn off your WHOIS server. So this is a big leap forward several generations of technology into the modern world. The reason why Roger's programmer was able to do this over two lunch hours is because these tools to deal with this technology are sitting on the programmer's desk – his or her desk – and they're using them day in/day out.

Whereas the stuff that you have to do to deal with WHOIS, all this line oriented stuff, is not stuff that people deal with all the time. It's much easier technologically to deal with. So it's a little bit of a plug for the technology behind RDAP.

It's what programmers are using every day and why we want to be adopting this stuff and getting into, you know, 2015 kind of era technology, 2010-era technology with (rest) and what not. So good demo. That's helpful.

Eduardo Alvarez: Thanks.

Rick Wilhelm: Thank you very much. I think that is roughly our prepared – to the extent that any of this is prepared – prepared commentary. If it's too prepared it looks too polished and then it loses its authenticity.

So if anybody has any questions or comments we're happy to take them. If you're a contracted party and you want to learn about how to get involved in the RDAP pilot working group because now is the time to get going on your implementation, you can chat with anybody that you heard speaking at the mic here and we can help you out because the group meets weekly. And

there's a mailing list that's going and what not. So questions welcome.
Thanks.

Quoc Pham: Shameless plug. Shameless plug (unintelligible). Shameless plugs. Quoc again from Neustar. We also have RDAP servers running. Big part of the working group, sorry, the pilot program. Authentication is probably - or authenticated access is our next biggest challenge.

We've seen what Eduardo has demoed with what Verisign's done with Dot Com and RDAP response. We've taken a different approach. This is why I'm very excited about the unified access model actually being set so that we can actually all get on the same path.

But we've got basic (orbs) that you can pass through. And we've also tested with implementing Neustar-issued (SSL)s. So you have to pass a couple of elements through to be able to get the full data. So we've got that in production. It's running. We've got some people using it, so that's our experience like what - I forgot your name now. Hang on. Let me get the name.

Rick. Sorry about that. I had a brain (unintelligible) for a sec. With what Rick said about RDAP being really user friendly. I think I'm done. With what Rick said about RDAP being really machine friendly but not human friendly, that's our experience that we've seen.

Obviously someone's come along, (take) Web access. Yes you can. Here you go. Here's a user guide. Good luck. And what I do fear is we become software support agents for people trying to develop systems, so work like what Eduardo's done with the client and also Galvin as well, just with something that you (unintelligible) hub. People can do it themselves.

So I think it's going to be a greater community effort as opposed to just the few buns on the seats here. Thank you.

Rick Wilhelm: Thanks Quoc. Good comments. I mean, yeah, as far as approaches to authentication, right, the certificate-based approach I think is going to be very useful when it comes to machine to machine, long-term (nailed up) connections.

And we're likely to see that duality exist where you've got things like open ID which are great for transient connections and transient authentication and authorization and certificates when it's more meant for long term because just due to like you said the challenges around exchanging certificates and such. But once you've got them, you've got them, right? So yeah, that's a good point.

We've got a couple of questions in the chat. Tom had asked about open source applications and if any of them about having any recent activities.

Would any of the registries and registrars who participated in the pilot be willing to publish the code they developed?

So I think that's something that is probably still forthcoming Tom. Right now a lot of this stuff is still in folks' "labs" quote/unquote if you will. I think we're likely to see more of that now that we're doing but I don't know of any in particular. I think that we're probably more likely to see some of that stuff spring up.

Then secondly we had a question from Dan. In the case of a (THIN) registry, how does the RDAP server at the registry pivot the query to the registrar? Great question Dan.

That's actually pretty simple. If they're querying for contact information, you can just do a 301 redirect or you can just put URLs in there that are referential for that kind of data, for that, so sort of standard Web mechanisms for doing redirection and references work. Go ahead Roger.

Roger Carney: This is Roger. One thing I'm guessing is most clients when someone builds a client will probably embed that so that the user won't actually see any of that happen. And they'll just do the - under the covers, you know, the redirection get the data, so...

Rick Wilhelm: Yes that's a good point Roger. The user will - the client will do that, will find it, see that the domain is thin and then go get the registrar and do the poll of the day, which is why the registrar bootstrap registry is so important. Stephanie please.

Stephanie Duscheneau: This is Stephanie with (Consortian). Our code is published as part of our open source registry.

Rick Wilhelm: Thank you Stephanie. I didn't know that.

Stephanie Duscheneau: It hasn't been updated with the most recent profiles. Don't have much of a voice but (Nomulus.phu).

Rick Wilhelm: (Nomulus.phu). It's spelled like (Nomulus). I'll put it into the chat. I know how (Nomulus) is spelled.

Man: It's like Romulus but with an N.

Rick Wilhelm: But of course. And Dot (Phu) is spelled like (bar). And, you know, the ICANN community is a great place to see, you know, open source contribution. I'm sure that Google would be interested in (poll) requests on that as folks get out and start using it and stuff like that, especially as it relates to taking updates related to the latest profile, although I'm sure that folks inside the plex are grinding away on it as we speak.

Man: Contributions welcome, definitely.

Rick Wilhelm: Dan says, "I'm guessing that registrars will need to have well-defined end points for querying contacts." Yes Dan, that's the reason that having the registrar bootstrap registry is so important, because they have to be able to be well known.

And there's also - it's also a reason why there's another thing that's out there. If you look up RDAP object tagging, if you do a search on that term, you'll see (ITF) papers related to a mechanism whereby (NIC) handles or contact IDs can be tagged to (unintelligible). If you encounter one in the wild, you will know where to go resolve it.

So if you - that's what object tagging is for. So for those that have seen that maybe in some IETF papers and not known what it's related to it's when you encounter contact IDs and you don't know where they're sourced from that you know where to go find out something about them.

You find a domain name, you intrinsically know where to go find something out about it because you look at the TLD – right of dot, right, but when you just get a contact handle and all its glory you don't typically know where to do that unless the source of it uses the object tagging mechanism. So...

Thanks. Any other questions? If not, you will hear the most glorious of sounds at ICANN. I am about to give you back – how many – half an hour of your day. You can sit here, soak up the free Wi-Fi and the fresh air. Or you can go somewhere else and do nothing.

Thank you all for your participation and the great Q&A and hope to see more of you on our weekly calls with the RDAP pilot working group. If you need to find out how to join, talk to me or talk to (Sue) here to my right. Thanks. Thanks to our panelists.

Sue Schuler: The RDAP Pilot Working Group is also having a meeting tomorrow morning at 8:30. I can give you that room where they're going to be. We'll be in the Sapphire Room at 8:30 tomorrow morning.

Rick Wilhelm: With bells.

Sue Schuler: With bells on. We can end the recording. Thank you.

END