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ICANN Transcription

IDNs EPDP

Thursday, 11 May 2023 at 12:00 UTC

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DEVAN REED: Good morning, good afternoon, and good evening. Welcome to the IDNs PDP call taking place on Thursday, 11 May 2023 at 12:00 UTC. We do not have any apologies, but Edmon Chung will be joining late.

All members and participants will be promoted to panelists for today's call. Members and participants, when using the chat, please select everyone in order for everyone to see the chat and so it is captured in the recording. Observers will remain as an attendee and will have view-only chat access.

Statements of interest must be kept up to date. If anyone has any updates to share, please raise your hand or speak up now. If you need assistance updating your statements of interest, please email the GNSO Secretariat.

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All documentation and information can be found on the IDNs PDP wiki space. Recordings will be posted shortly after the end of the call. Please remember to state your name before speaking for the transcript.

As a reminder, those who take part in the ICANN multi-stakeholder process are to comply with the expected standards of behavior. Thank you and over to Justine, please begin.

JUSTINE CHEW: Thank you, Devan. Two things. I think we probably should note Donna's apology. She's on vacation at the moment, which is why I'm substituting for her today as chair. The second thing is in terms of SOI updates, I should probably note that I've been appointed the ALAC representative to the subsequent procedures IRT. And that's due to start next week, I believe.

So I'm not sure if anyone else has an SOI update and was too quick to put up their hand before Devan went on with her normal welcome message. I'm assuming that if there is anyone who needs to do an SOI update, they can just post something in the chat and I'm sure our staff will pick it up. Okay.

So moving on to agenda item two, chairs update. I'm trying to remember what I'm supposed to remind folks on, which is, well, thank you all for remembering to come an hour ahead of our normal time. I think most of us are getting used to the fact that our calls are now going to be an hour earlier than we normally had had it so far. And thank you, Ariel, for reminding me what I was supposed to say for the chair's update.

We do have a community webinar next week on Wednesday, I believe. And staff, if you want to, Ariel or anyone who wants to put a message in the chat on the timing and the date and stuff, that will be appreciated. It's at 11:00 UTC, I'm told, I'm reminded. In that community webinar, we're basically going to be talking about mostly the initial report recommendations, the 68 recommendations, and basically trying to get the community up to speed about our initial report recommendations. So if any of your groups want to attend the webinar, you're most welcome to. I don't know if there's a registration process. If there is, then I'm sure the staff will let us know.

And also on, not the next week's call, but the week after on the 25th of May, we will be having a chat with SSAC. That's our second outreach with SSAC. Again, because SSAC doesn't have a representative or what we call a member or participant in this particular EPDP. So we kind of make it a point to talk to SSAC about their inputs, especially since they have given earlier inputs before we were doing the early processes of our phase one work. So we're going to touch base with them on the 25th, just to make sure that they don't have any concerns with our recommendations in the phase one initial report.

Yes, that's great. If you could encourage your groups to attend the community webinar next week, that would be great. I mean, it's the best way for them to get up to speed with the initial report recommendations, really.

Okay. And having done the chair's update, we are going to do a primer, at least Ariel is going to do a primer, predominantly on the IDN table harmonization, the theory behind it. And I guess if

Sarmad wants to add anything, we can have room for that as well. And there will be other inputs that we've received from Michael and possibly Zhang Zuan.

But essentially, I think most of the time that we're going to spend on this call is to try and understand what is being done by the harmonization, what is harmonization to begin with, what's being done by harmonization, or the efforts that's being undertaken by ICANN. Also, what is the practice of harmonization within certain registrars. And then we're going to try and get through that and possibly start deliberating on future tables. And if we have time, we can deliberate on the policy implications for existing tables. So, no worries, Maxim, we're still doing the intro. And I guess at this point in time, I can hand over the talking stick to Ariel.

ARIEL LIANG: Yes, thanks, Justine. So, just to caveat this, I'm also in the process of learning the harmonization and this concept and what it entails. And I should also give credit to Sarmad, in particular, who helped me get up to speed with this very important concept. And he actually developed a briefing paper that I circulated yesterday on the mailing list. And I understand it's very limited time and probably no one got a chance to read through it yet, but you have the document on the list and you can check it later after the call.

So, this presentation is based on a lot of materials from that briefing paper. And then also I want to give credit to our registry/registrar members, especially Dennis, [inaudible] and also Michael. I checked with them on this presentation and get their input as well. So, there are some additional examples that Michael

and Dennis provided that I incorporated here. So, when we get to that slide, I will invite them to expand and chime in. So, again, thanks everybody for the input and then hopefully we can provide you the context and background to understand these questions.

So, just a quick reminder on the charter questions that we're dealing with in a set. That's C4, C5, and C6. So, question C4 is actually the core question of harmonization. And then you probably noticed the wording here is, should the second level IDN tables offered under a TLD, including IDN variant TLDs, be required to be mutually coherent? So, the word or the phrase mutually coherent actually is interchangeable with harmonized. And just for our consistency of language, we decided to go with harmonization or harmonized throughout the introduction. And maybe we'll just stick to that instead of using mutually coherent. And of course, we will provide you the explanation of what harmonization means.

So, C4 is really the core policy question this group needs to address is whether we must require harmonization as a policy recommendation. So, that's the key. And then C5, it's talking about a specific mechanism of harmonization. And in the staff paper, there are some suggested methods. And we will go into detail when we get to the later slide. But this is kind of an add-on question to C4, because C4, that's the core issue we need to address. And then the mechanism comes after.

And C6, that's a question about IDN table format. So, in the text, we're asking, should registry operators be required to use the machine-readable LGR format as specified in RFC 7940 for their IDN tables, or should they have flexibility to decide on the format

of the tables? So, again, this is another harmonization mechanism-related question and specifically on the IDN table format. So, that's why we believe these three questions go hand-in-hand, but C4 is the most important one that we need to address.

So, this is a quick refresher on what is an IDN table. And Sarmad already presented on this a couple of times, but we are just refreshing everybody's memory on that and with some key points we want to mention here. So, IDN table is used by a registry operator to represent the rules for second-level labels under its gTLD. So, you probably could interpret IDN table as the—actually, maybe I should go talk about the sub-bullet points before we go to the next one. The rules are basically validating whether a second-level label is valid for registration and also calculate the variant labels for a requested second-level label and then determine the disposition value of the variant labels.

So, these concepts are not foreign to our group because we just deliberated on the RZLGR and then you could potentially interpret the RZLGR as the IDN table for the top level if you want to understand it this way. So IDN table is basically for the second level and has been around for many, many years, even before the RZLGR. But what they're doing is essentially the same. It's validating labels and then calculating their variants and then determining whether the variant labels are allocatable or blocked. So, that's a general concept for IDN tables.

And then for a given gTLD that's managed by a registry operator, they could offer multiple IDN tables that serve to cover a variety of languages and scripts. So, if you recall what Sarmad presented

IDN table can be language-based, can be script-based, and then the registry operator, they are the ones that have the responsibility of developing IDN tables. And they actually serve as the authoritative source, basically, to generating IDN tables and then the registrars, they will need to rely on the registry operators to check a label against the IDN table. So, they're the owner, basically, for IDN tables.

But then there's another additional step, is they cannot implement IDN table without the review and approval by ICANN. So, once they develop the IDN table, they need to submit to ICANN Org for review and ICANN Org needs to approve it based on security stability considerations. And this is also part of the mandatory requirement. And this IDN table review is done through the registry services evaluation policy process. So, that's another key point everybody should remember.

And when the registry operators, they develop IDN tables, they may refer to another additional source called reference LGR, which is something that's developed in consultation with the script communities for developing rules for the second level labels. And the script communities that we talk about here are generally generation panels. So, they not only did the important work for the RZLGR, but they also did the development of the reference LGR so that it become a source for registry operators when they develop IDN table, they can just check that as one of the considerations.

But then there's one thing I want to emphasize, is that the reference LGR doesn't have the same weight as the RZLGR because it's really just a reference. It's not the rule, basically. So,

the registry operator's IDN table can be different from what the reference LGR includes. So, that's another key point.

And then lastly, for the second level IDN variant labels. So, if you use the IDN table to calculate the variant labels, once that's done, the registry operator, they may block or activate that variant label for registration. And there's already existing rules in the registry agreement. So, I'm not going to talk about that, but we won't touch on that point right now because that's very much related to our discussion for the same entity principle. But I just want to note that currently there is a possibility to activate registration for the variant labels, but most of them actually are blocked. So, that's the current situation.

And I note that Michael put in the chat, the reference LGRs have only recently been developed. So, during the 2012 round, those have not been available and registries had to find their own way to create IDN tables. So, yeah. Thank you, Michael. Indeed. So, what I just want to summarize is IDN table definitely predates—the RZLGR predates the work done by the generation panels, and they have been existing for much longer than those. And there's a lot of history and evolution related to that. Any questions so far for this refresher on IDN table? I'm not seeing any. So, I hope I covered this material accurately.

So, now we're going to this key question of harmonization. What is it? So, the box on the top basically talks about the concept of— thank you, Anil. Thank you. So, in the staff paper, there is actually a section that talks about harmonization of IDN tables for the second level, that's section 3.5.1. And I tried to capture some key points here. So, that's in the case that if multiple IDN tables are

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offered for a given gTLD, the staff paper recommends those tables be harmonized to produce a consistent set of second level variant labels. So, that means also the consistency is required across all the IDN tables used for the variant labels of a given gTLD. And then what this means is that the set of IDN tables do not need to be exactly the same, but they must be able to produce a non-conflicting set of second level variant labels set when a requested label is checked against any of the IDN table.

And then I understand this is probably a little complicated just looking at this bullet point, but I tried to summarize it and then make it more understandable for the group. So, essentially, harmonization means that the variant relationship between any two given second level label must be consistently defined across all of the IDN tables offered for a gTLD and also the future variant labels of that gTLD.

So, the end goal for harmonization is that no matter which IDN table is used to calculate the variant label set of a requested label, the variant label set produced for that requested label must be the same and include all of the variant labels identified in not only the IDN table that's used to track the label, but also the other IDN tables offered for that gTLD and its variant gTLD.

So, that's the key concept of harmonization, and I know it's a lot to digest, and I want to pause here, just want to check whether the group have a hard time understanding this, whether this is clear, what harmonization means. And I will invite Dennis, Michael, or others to chime in, and in case I didn't explain this very well. But I also have a quick slide after this to show an example of what that means. And Dennis, please go ahead.

DENNIS TAN: Thank you, Ariel. I agree on all the points you just described here. Just wanted to note, if it was not apparent or clear, harmonization deals with the composition of the set of variant labels and does not deal with the disposition values. What we have referred in the past as the behavior of a variant label, whether it's going to be blocked or allocatable. That could be different.

What harmonization is looking for is that the set of labels in a set is consistent throughout the TLD, regardless of what IDN table is used to calculate those. And probably you might ask, how does the registry know which IDN table to use? And I can speak from our own experience at Verisign. So when a registrar requests an IDN, this is not valid for ASCII, just for IDN registration, the EPP create command needs to come with a language tag parameter. And this language tag parameter, which will identify either the script or language that they intend to use, that will inform our registry to see which table we need to use to validate the registration. So that's a little bit of background there. Thank you.

ARIEL LIANG: Thanks, Dennis. Appreciate that additional background. And indeed, harmonization, here we're talking about the variant label set. So all the labels in the set must be consistent. But we're not talking about their disposition values yet. We're just talking about the composition. So that's the key for harmonization.

And actually, this slide, I give credit to Dennis, tried to visualize this to help the group understand, if harmonization is not done,

what would be the potential consequence, and with harmonization, what would bet the potential outcome?

So on the left hand, you will see there are two IDN tables, we call it IDN table X and IDN table Y, and they're both used for TLD1. And we just have this assumption. So basically, IDN table X includes three code points, that's A, B, C. And then for code point A, IDN table X has the rule that A has a variant code point of B, and B has a variant code point of A. So basically, A and B, they're variants for each other, based on the rule in IDN table X. And then for IDN table Y, it has four code points, and it's A, B, C, D. So for this table, it actually doesn't have the rule that A and B, they're variant code points. They basically say none of these code points has a variant code point. So that's a different rule, but it's also for a different table.

So in that case, if someone wants to register the label AAA at the second level, based on table X, this is allowed they're all valid code points. So a label called AAA could exist at second level. And then a label called BBB could also exist at the second level, because it's also allowed code points in the table X. And due to the variant rule in table X, label AAA and label BBB, they should be variant labels for each other. So for table X, this will be an outcome. So both labels are valid, and then they have variant relationship.

And then for the table Yes, both label AAA and BBB, they could coexist, because they're valid code points, you know. However, the variant relationship wouldn't exist, because based on the table Y rule, they are distinct labels. They don't have variant relationship. So that's the potential situation. So if you don't do

harmonization, you could have two different outcomes if the two tables are used to generate the labels and validate them and check their variant rules. So you will see there are some inconsistency here if you don't do harmonization.

However, if you look at the right-hand side, that is what if you do harmonization, what would happen? So basically, table X, we're not touching that at all. It's still the same. And then for table Y, that's the part we have done the harmonization work, is basically to include B as a variant code point for A, and then include A as a variant code point for B in the table Y rules. So that's when a requested label AAA is generated, you will see that BBB will be calculated as a variant label for the requested label AAA and vice versa, so that the variant relationship will be consistent as a result of harmonization. So that's conceptually what harmonization means in this example. So I want to stop here and see whether there's any questions or comments and welcome Dennis to chime in as well. And I see there's some chatters. And I hope if nobody has a question, I hope everybody understands what harmonization means in this example. And I guess I could move on.

So now we're talking about the why. So we just covered the what, what is harmonization. So now we're talking about why it is needed. So there are some points that we want to measure regarding the current practice for IDN table development and review process. So currently, a given code point in an IDN table— so for any given code point, there is no requirement to include that code points other variant labels that are identified in the other IDN tables offer by that same gTLD. So there is no requirement for

harmonization. And as a result, any requested second-level label may only be checked against a given IDN table for generating its variant labels, and there is no requirement for checking against the other IDN tables offered by the same gTLD. So basically, there is no requirement for harmonization.

And also, due to that, there is no requirement for ICANN Org to review the IDN tables by cross referencing the other IDN tables offered by the same gTLD. So each IDN table is submitted to ICANN for review and approval in an isolated manner. So that's the current practice because of the lack of harmonization requirements.

And then the potential consequence of that is that if a requested label is checked via one IDN table to produce the variant label set, there may be inconsistency because of that, if you know it's only checked against one specific IDN table and not cross referencing the other IDN tables offered by the same gTLD.

And then if as a consequence of that, the variant labels may be permitted for registration by different registrants as distinct labels under the same gTLD due to the inconsistent variant relationship that's produced as a result of no requirement for harmonization. So that's a problem, I guess. And so that's to give us the rationale why harmonization is needed to ensure that the variant relationship is consistently defined across the entire gTLD and also its future variant labels. So that's the why. And then I will stop here and see whether there's any questions or comments for this slide. And Alan, please go ahead.

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ALAN BARRETT:	A question, please. Under current practice, when a registrant wants a second level domain under a TLD with multiple IDN tables, does the registrant choose which IDN table should be used to process their second level domain? And does this imply that they could maliciously choose one that allows two distinct labels, which a different IDN table would have shown as variants?
ARIEL LIANG:	Thanks, Alan. That's a great question. And I think Dennis probably mentioned that previously. So maybe I will either let Dennis or Michael to answer. Michael had his hand up first. So, Michael, please go ahead.
MICHAEL BAULAND:	Thanks. Actually, the registrant is probably not able to choose this. It will be the registrar who is able to choose which IDN table should be used. And related to your question whether they could misuse that choice, that actually shouldn't be possible because the registry should take care that no inconsistent registrations are possible. They created the IDN tables and they have to ensure that it's not possible to misuse it in any way. Thanks.
ALAN BARRETT:	Okay, thank you. So a quick follow up then. This proposed harmonization rule would be to put a stop to that practice of being able to use IDN tables that conflict in some way. By conflict, I mean that where the one IDN table says these are variants and the other IDN table says no, they're not variants, they're distinct.

ARIEL LIANG: Thanks, Alan. Yeah, I just want to quickly interject. Yes. So the harmonization goal is indeed to generate consistent variant label sets for any given requested label, no matter which IDN table is used. So that's indeed the conflict harmonization aims to resolve, is to make sure there's consistency for a variant label set that's generated. And then I see Dennis still has his hand up. So perhaps Dennis, you can go ahead.

DENNIS TAN: Thank you. I just wanted to add on Michael's response to Alan. And we are the registry, so we don't know what exactly registrants are experiencing throughout the different storefronts that registrars offer. Anecdotally, what we know is there are different choices, how registrars implement the choice of language or script that they need to select. Sometimes the registrar will pick something for the registrant because the registrant may not know, right. There are registrars in specific regions or countries, so they don't offer many options to just pick one for the registrant.

So it comes down then to the registrar to validate those two parameters, the domain name, the string, and the language set. And from there, we validate, right. Thank you.

JUSTINE CHEW: Okay, that's a good set of questions and answers. Anyone else has any questions or want to offer an opinion? If not, then Ariel, can we proceed?

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ARIEL LIANG: Yes. Thanks, Alan, for the questions and Dennis, Michael, and others for chiming in to provide a response. And then this is an example we tried to, or actually Sarmad put together to showcase the potential problem if harmonization is not required. But, of course, it's just an imagined scenarios. It doesn't mean it's necessarily the current case.

So, for example if someone, a registrar, wants to request the label, this is the first label in Arabic, it means Mecca. And then the label is checked against an IDN table that's used for the Arabic language. And then the table will validate the label based on the code points included, and then it's all valid. And so this label goes ahead and then the registrant A could register Mecca.tld1 based on the IDN table for Arabic language.

And then, at the same time, if we don't have harmonization, there's another registrar B wants to register the label Mecca, but it's in the Urdu language. And then, of course, that label could be checked only against the Urdu language IDN table, and then that generates a bunch of code points that validate it. It's indeed something that can be registered. And if you look at the code point Unicode column, you see the second and the third one, they're different because they're only included in the Urdu IDN table. So, then after this check this label is validated and registrar B could register Mecca.tld1, but that's in the Urdu language.

So, if we don't do harmonization, the Urdu code point wouldn't be included in the Arabic IDN table, and it wouldn't show they're actually variant labels for the Arabic code points. And then, it's the

same situation for the Urdu IDN table. It wouldn't include the code point related to the Arabic label and showcase they're actually variant labels for each other.

So, in that case, these two variant labels, and they look almost the same, will be both delegated at the second level, and also they're delegated to different registrants, and that could potentially cause confusion and issues and security stability concerns. So, that's an example that we try to showcase, but I see Dennis has his hand up.

DENNIS TAN: Thank you, Ariel. I think we're missing something here. Harmonization is not a magic tool or feature that creates variant relationships. Here, if a registry chooses to create variant relationships among those code points, that's one thing. Harmonization happens as a second step. To make sure that the tables are consistent across the TLD.

So, here, to me, what I see here is a design choice by the registry to basically state the table Arabic, a list of code points, there is no variant relationship, and there is a table for Urdu which lists a different set of code points with no variant relationship with the Arabic table. And that's a design choice. So, harmonization has nothing to do here.

Once the variant relationships are established, then harmonization happens, to make sure that you want to make those relationships consistent across. But maybe I'm missing something here. I see Sarmad's hand.

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JUSTINE CHEW: Sarmad, go ahead.

SARMAD HUSSAIN: Right. So in this particular case, the variant relationship between the second character in Arabic and Urdu, 643 and 689 is already established by the Arabic script community and the reason it's established is because, of course, these two characters, even though different in Unicode, produce an identical glyph when they're joined. And similarly, Arabic script community has also identified the variant relationship between 629 and 663, which is the last character in that string for Arabic and Urdu. And so that variant relationships also identified and defined by the script community. And the reason is because they also produce identical glyphs in Arabic script, even though ...

So the way I guess this works is that Unicode has encoded these two letters, the K—you can think of a K and T in Arabic and then K and T in Urdu as different code points. That's a Unicode decision. But as far as the script community is concerned, K is K, whether it's Arabic or Urdu, and T is T whether it's Arabic or Urdu. So, so Arabic script community is pretty clear that the two K's are the same and the two T's are the same. But one is one is the K and T is the Arabic set is used in Arabic language and the other K and T is used in, for example, Urdu language or Persian language. So the two of these in Unicode Arabic script communities, although this is identified as variants in root zone LGR as well as reference LGRs for Arabic script.

The issue here is that if an IDN table is being designed for Arabic language, they would obviously choose the Arabic K and T to be included. And if they're designing an Urdu table, they'll obviously choose the Urdu K and T to include in the IDN table. And, of course, then the challenge comes that if both Arabic and Urdu are being offered under the same TLD, then you could actually go either—if you go to Urdu table and go to Arabic table separately, without harmonizing them, then as a result, you can get the two identical strings as non-variants of each other, even though Arabic script community is quite clear that they should be generated as variants. So this is an example of two IDN tables not getting harmonized based on different languages within the same script. Thank you.

JUSTINE CHEW: Thanks, Sarmad. Dennis, you had a question in chat. Did you want to verbalize that? Yeah, see your hand up. Go ahead, please.

DENNIS TAN: Yes, thank you. So I understand what you're saying, Sarmad, but that's a design choice of the reference LGRs. And that's why bringing these specific examples, what you're implying is that the registries need to or will have to be required to harmonize with a reference LGR. And that's something totally different as to the scope of question C4. We're talking about harmonization of variant relationships within a TLD. And that's agnostic to any specific variant relationships, whether it's from a reference LGR or a script community or already using it or whatnot.

That's a different conversation, right, whether certain variant relationships ought to be implemented. For example simplified Chinese, Han table or what have you. Same with Arabic script. But that's a different conversation from harmonization. Harmonization is a checkpoint after the fact, not trying to harmonize with other practices. And I see your hand.

JUSTINE CHEW: Sarmad, did you want to respond?

SARMAD HUSSAIN: Yes, thank you. So I think the goal actually here is that if there are two variants, in this particular case, the motivation behind harmonization is we want to address a potential security problem where two strings, which are identical in this case, for example, or in the other example with the Latin and Cyrillic as well, there are two strings which are identical visually or same, quote unquote. And I guess that's what we call variants. If there are two such strings which are generated under a TLD, then they should be, I guess, either registered by the same registrant or, of course, blocked. Otherwise, if they get registered to different registrants, then this can potentially cause a security problem for end users. So that's sort of the end goal.

I guess a question is that who identifies what is a variant label? And I guess what I was suggesting was that this is input we take from the relevant script community that they advise us on which characters should be considered variants and which characters

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should not be considered variants. And obviously that's based on their understanding of what is the same or not.

And I guess coming back to Dennis's question, I guess what we are suggesting is that variants should be based on, I guess, community's recommendation. And that's sort of at least what is being implied. Thank you.

JUSTINE CHEW: Satish, I see your hand up.

SATISH BABU: Thanks, Justine. So I think Sarmad has very nicely explained this example, and I can straight away see the logic of why we should have harmonization. But I note that prior to what we are doing now, registries used to create their own IDN tables for different scripts. Sorry, for different languages using the same script, they had separate IDN tables, presumably created by themselves without a community consultation.

But currently we have a community consultation, and that community has produced an LGR. So the way it is going to be approached will be slightly different. And therefore there is an expectation that we conform to the community-generated reference LGR. And that much I can understand.

I have a question, though. Now, earlier on, the different languages using the same script, they had different IDN tables based on that particular language's use. Now, when you're going to combine everything into one, the requirement that all the variant

relationships should be identical, it's a kind of union of both. Are we going to impact, I mean, when you impose the rules of one language over other, both using the same script, are there going to be any collisions or issues arising out of that process? Thank you.

JUSTINE CHEW: Okay, Dennis, would you mind if Sarmad took this question first? Okay. Thank you, Sarmad.

SARMAD HUSSAIN: Thank you, Satish, for the question and Justine. So I think Satish's question is going into how this should be actually implemented. There are at least, in the, I guess, information we've shared with the team, two ways this can be implemented. One is data-driven and one is process-driven. So there are more than one ways to implement it. And as I said, in one case, one could keep the same IDN tables and update the process a bit. And I guess, Ariel will get into that eventually. The other option is, of course, that keep the process the same, but then update the IDN tables. So, both options are there. There may be other ways of doing this, at least the way we're suggesting. But, again, those details will come later on. It's more of an implementation question. Thank you.

JUSTINE CHEW: Okay, thanks, Sarmad. Dennis, please go ahead.

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DENNIS TAN: Thank you, Justine. So, I think we are talking about two different things. One is harmonization, and we've seen what harmonization means. What is presented here, and decision-making on what variant relationship should be, could include in variant tables at the second level. That's prerogative of the registry operator, and there are processes in place to go through the checks and balances to make sure that those tables do not produce significant security and stability issues. But that's outside the question of C4 here. We're dealing with harmonization, which is, again, after the variant relationships are created, what variant relationships are included in the IDN tables, that's not in the question here. And in my opinion, it's an expansion of the core of the question. Thank you.

JUSTINE CHEW: Sarmad, go ahead, please.

SARMAD HUSSAIN: Thank you, Justine. Just to respond to Dennis. So, I think in some ways, yes, what Dennis is saying is actually correct, that harmonization is eventually a process which acts on IDN tables. And then what goes into individual IDN tables, and how each of those IDN tables is, I guess, checked is sort of a separate process.

However, I think there is probably one more impact of harmonization. And that is that even when registries are doing it, and then I guess there will be some implication on the review process of those IDN tables at ICANN as well, is that, for example,

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when a registry is designing, in this case, let's say an Arabic language IDN table, while designing the IDN table for Arabic, they would also probably need to look at other IDN tables they already have for Arabic script, using Arabic script, and see whether the design of Arabic language table needs to take on some influence from the other IDN tables in other languages, which also use Arabic script, in the first case example.

So, sure, designing IDN table may actually be a separate process, but I think that eventually will have some influence on the design itself, based on the, perhaps downstream process of harmonization. I guess that's what harmonization potentially is. It's looking at the design of each individual IDN table and seeing it in the context of other tables, and then through that either updating the process or the table content itself. Thank you.

JUSTINE CHEW: Okay, thanks, Dennis and Sarmad, for the conversation. Does anyone else have any questions regarding what has been said so far? Okay, I don't see any hands up, so I would compel Ariel to continue.

ARIEL LIANG: All right, sounds good. And thanks for the discussions. So, yeah, actually Sarmad already mentioned about the harmonization mechanism, and this slide intends to cover that. And we just want to talk about the general method that was suggested by staff paper, and currently there's no actual standard process for the mechanism for harmonizing IDN tables. So there's only two

methods for your consideration from staff paper, but doesn't mean they're the only ones that   can be considered.

So one way to do it is, as what Sarmad already mentioned, extend each IDN table. So what it means is that update each IDN table to include the—actually, I probably shouldn't put the cross language, cross script here. It just should include the relevant variant code points of a given label to help identify the complete set of variant labels against a given label. So updating each IDN table to include the full set of variant labels for a given label so that no matter which IDN table is used, it will generate the same variant label set.

So, I guess, the pros for this method is that there's no change to the existing process for checking the label. And it's just still just check one IDN table. But then the con is that there may be more work for the registries to update each IDN table to include additional code points. So that's the complication there. And that's the first method that was suggested.

And then the second method is to extend the label check process. So instead of doing update for each IDN table, this method is to create additional step in the label check process to check a request label, not only against the relevant IDN table for that label, but also a common IDN table which includes all of the variant code points of a given label, no matter which language or script or IDN table those labels derived from. So, so two step process, basically.

And then there's, so for the second suggested method, the pros is that there's no change to the individual IDN table. But the con is that the process itself needs to be updated and it will potentially

impact the existing operations by the registries and the engineers, they have to reconfigure in their system, for example, to create this additional step. So it's not an easier way per se, but it's just different from method one. So these are the two suggested methods.

And then I just want to give a quick note about the common IDN table concept in the second method. So just a note that in the reference LGR that Sarmad explained earlier, there's a set called common LGR that's included in the LGR that helps identify cross language and cross script variant code points. And it just went through public comment and it's being finalized. So, so that's what could potentially be incorporated for the second method. But of course that's up to debate or consideration by the stakeholders, whether this is something they want to adopt.

So that's the two suggested harmonization mechanism in the staff paper. I want to stop here for a quick moment and see whether there's any questions or comments. And Dennis, please go ahead.

DENNIS TAN: Thank you, Ariel. So yeah, first point, yes, I agree, we need to strike through the cross language and cross script references here. Harmonization is agnostic to those items. Variant relationship can exist for different reasons as well. The second point, methods. So yeah, these two methods are representative as to how a registry could solve the problem, but ultimately how a registry solves for the harmonization issue or requirements, it will depend on each of the systems. That's it. Thank you.

ARIEL LIANG: Yeah. Thanks, Dennis. And I see Sarmad has his hand up.

SARMAD HUSSAIN: Yeah, just to add that these two methods are presented as just examples of how this could be done without any suggestion on picking one or the other. As Dennis said, this could differ from registry to registry as well. At the end of the day, I think if the group eventually agrees to this policy, what would be required would be harmonization itself, how it's done, of course, could vary. You know, because different methods could eventually lead to the same result. Thank you.

ARIEL LIANG: Yep. Thanks.

JUSTINE CHEW: Just a note. So what I'm hearing is these two methods that you see on the screen are potentially just two possible ones. There could be other ones that haven't been suggested yet. So if anyone has a way forward that they see is more feasible or would achieve the same purpose, but doesn't disrupt too much what is in place already within the registries and the registrars, then by all means, please send that through or raise that. Dennis. Go ahead, please.

DENNIS TAN: Yes. Thank you, Justine. I was going to respond in chat. So I think, mainly, yes, this is these are possibilities. But our registry

platforms, most of us registries, these predate this harmonization requirement, if any. And it will come down how we can retrofit or design architectures within our existing operations. So exactly how this is going to be done, we don't know. I don't know. Right. We need to be presented with a requirement and then go through the design process, architectures and design, what have you. And then we'll solve for the issue.

Presented with the policy requirement is harmonization, meaning create consistent set of identity within a TLD or variant TLDs. Then we can solve for that. How we achieve that goal, I think we can leave that up to the registries to decide how the best way to make that work. I don't think we need to go into prescribing a particular method or methods to choose from, because I think that's going to be counterproductive.

JUSTINE CHEW: Thanks, Dennis. That's quite helpful. I have to make a call, I guess, whether we revisit that in the next call or something. But in the meantime, if there's no more suggestions as to possible way forward, then I would ask Ariel to carry on.

ARIEL LIANG: Yes, I'd love to. So, actually, the next slide provides an anecdote on some existing harmonization practice that's done by certain registries. It's not exactly the mechanism suggested by staff paper, but we just want to provide you a flavor some existing practice that also achieved a harmonization goal. And I credit this to Michael to provide this from his experience as a backend

operator for several registries. So I will invite him to chime in after I go over this slide and provide more detail on that.

So, for the anecdote that he shared, for each requested label, the registry will calculate the label's canonical form based on all of the active IDN tables that's used for that gTLD. So when he shared about this, I asked him what canonical form means. He basically said canonical form is a variant code point of the lowest Unicode number. So if you see an example, there's a code point called U plus 0127. And then when you calculate it, it will generate two variant code points, U plus 0068 and U plus 0125. So the canonical code point for that label 0127 is 0068. That's the variant code point with the lowest Unicode number. So that's the canonical code point.

And another key concept is that the canonical code point can derive from the same IDN table for the requested label or derived from a different IDN table that's used under the same gTLD. And there's another example that Michael showcased. It's a Cyrillic letter, U plus 0430. Its canonical code point is actually U plus 0061. And it's a Latin letter that's derived from the Latin IDN table.

So whenever a requested label is submitted, the canonical form of the request label will be checked. And if the canonical form is the same of any existing label, then that requested label will be blocked by default. So basically you find out it's a variant label of an existing label. No matter which language, which script, which IDN table that was used to check that requested label, the canonical form will serve as the key to find out its variant relationship. And then harmonization is achieved in that method. So I hope I've done justice explaining this example and I'll

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welcome Michael to expand on this if I didn't cover any part accurately.

MICHAEL BAULAND: Thanks, Ariel. It was almost perfectly clear, at least for me, but I know this already. I don't think it makes sense to go into every detail here. If anybody is interested in more details, some more technical information, they can just contact me out of this meeting and I'm happy to explain this.

Basically, this is kind of the solution which we saw on the previous slide. We leave out all our IDN tables as they are. We are not doing some harmonization and changing them. But whenever a domain is registered under any of the possible IDN tables, we also, so to say, theoretically apply the same domain name to all the other IDN tables which have not been selected. So we don't just calculate the variants for the table that was selected, but we also generate the variants for all the other tables and store them in a canonical way in our database. And whenever a new domain is registered, we check whether any of the already stored canonical forms would contradict the registration. So if you register a label in table one, but we have a canonical form of an already existing label based on table two, which would be in conflict, then the registration is blocked because it would be a variant. So that's basically it. Thanks.

ARIEL LIANG: Thanks very much. When he shared this example, I was asking him whether we can understand canonical as primary. I mean, it's

not the exact match, but if you try to understand it in our top-level related discussion, we have this primary label concept. But maybe you could potentially say the canonical form is the primary label for the second level, but it's arbitrary. It's decided based on the Unicode code point. So then if the primary or the canonical form is the same, then the variant relationship is established through that way. So maybe that could potentially help folks to understand it, but Michael, please go ahead.

MICHAEL BAULAND: Yes, definitely not comparable to primary label, because in our canonical calculations, you could even get a canonical label, which is a mixed script label, because we never show that canonical label anywhere. And it's just internal. It may be a mixed script label, so it's definitely not a primary label and not used for anything else but to check for harmonization of all IDN tables.

JUSTINE CHEW: Okay, thanks, Michael. So I should point out that the reason why we included this particular slide in the deck is we wanted to also get inputs from some registries and registrars who are prepared to share with us what they currently do in terms of their form of so-called harmonization, just to give a flavor of what's the lay of the land at the moment in terms of how they deal with this situation in order to provide much needed context in terms of what policy we want to move towards and how we want to structure the policy, whether it's strictly directive and explicitly directive, or can it be just directive and some aspects of it can be left to the parties

involved to work on the details or some combination or either-or kind of thing.

So again, it's a question of, in the slide deck, two methods were proposed. They're not the exclusive and exhaustive ways of handling it. So just to note that. If there's no further question or comments, do we have more to go on, Ariel?

ARIEL LIANG: Yes, we do. Okay, thank you. So this is some thinking we had in terms of thinking of this scenario. If harmonization becomes the policy requirement, what would be the potential outcome? So of course there's one thing we didn't note in the slide is that registry operators need to ensure that the variant relationship in all of its IDN tables of a given gTLD must be consistent. So if harmonization becomes a requirement, that will be an outcome that we didn't put on the slide. But here we want to emphasize some additional potential outcome that the group probably want to consider, is that it will empower ICANN Org to review all of the IDN tables offered by a gTLD and its variant gTLDs in a holistic manner. So they will be authorized to cross-check all of the IDN tables to ensure this consistency is reflected. And then also ICANN Org may reject an IDN table if the variant label relationship of a given code point is not consistently produced in certain IDN tables.

So that's some potential outcome we should understand if we require harmonization as a policy requirement. So see whether there's any comment or question on this. And I don't see that and I saw some chatter, but I guess it's probably okay.

And then I want to move on to the IDN table formats because it's a part of the question C6. I mean, it's actually what C6 is about. And then it's related to our discussion because harmonization, one of the mechanisms could be enforcing consistent IDN table format. I think that's how I understood it. So that's why I want to provide some context and background on the IDN table formats.

So this is what I understood from previous presentations by Sarmad. There were three specific standards from the IETF that specified IDN table format. One from RFC 3743, one from RFC 4290, and then the third one is RFC 7940. So in this table, you will see the 3743 is the earliest one developed in 2004, the second one 2005, and then the third one 2016. So that's the latest.

And in terms of the specifications in each of the RFC, so the earliest and the second earliest, they asked the IDN table to be in the TXT format. And then the most recent one, 7940, is the XML format. And then if you look at the IDN table, what is required is that all of them ask to list the permitted code points in IDN table. And then for 3743 and 4290, they will separate the variants for the code points using some symbols. So 3743 is the semicolon, and then 4290 is using this pipe symbol. But then for 7940, the variant code points are defined on each of the relevant code point. So it's not just using a symbol to separate, but also include definition of that. So it's more detailed.

And in terms of the rules for the code points and the variant code points, the first two, they basically just describe the rules in a comment section in IDN table. But then for the latest one, the rules are machine readable. So that's the differences between these IDN table formats.

And the data that you see below, it's thanks to Pitinan, and they look at the IDN tables that are currently stored in the IANA repository. And they actually collected this data a while back in October 5th, 2021. But I checked with them just recently to see whether there's a huge or significant changes. And there are some changes, but not.

So you can see that the majority of the current IDN tables are in the TXT format. That's 12,985 as of October 2021. The XML format is 1113. And then there's also two other formats, the HTML and PDF. So those are the outliers, but I just wanted to showcase there's some other formats exist as well. So there are some changes for today's data, but not significant to tilt the scale of those different types of format.

And then another key point I want to mention is the reference LGR, which is a work done more recently by the GPs. They use the XML format as recommended by the RFC 7940. And also, what I mentioned earlier about the common LGR that's included as part of the reference LGR that also has the XML format.

And in addition to that, ICANN has developed this LGR processing tools that can help registries to automatically harmonize IDN tables in the XML format. So that's why the charter question C6 mentioned RFC 7940, the XML format, because if future IDN tables, for example, all use the XML format, they could be harmonized more easily using the LGR processing tools. That's one of the advantages, but I want to showcase for the existing situation, the vast majority of the IDN tables are not in the XML format, but TXT. So that's a background regarding the IDN table

formats. And I want to stop here and see whether there's any comments, questions. And Dennis, please go ahead.

DENNIS TAN: Thank you, Ariel. So I agree with what you presented here, except for the last line. I'll come back to that in a minute. So just for everybody's level set, or at least share my thoughts on IDN table formats. These IDN table formats, whatever you choose, whether it's 3743, 4290, or 7940, these are ways to represent a second row of a table. And up to this point, the IDN table is an artifact, again, to represent the rules of a registry. But in no way, shape, or form, the IDN table informs how the registry logic works. Again, for example, we just saw an example of how the Tango registry system works in terms of calculation of variants. It's not [inaudible] by the IDN table per se. They just solve for the problem in a different way that is efficient for the registry platform.

But the IDN tables, when we output the IDN tables for publishing, they're just representation of the rules how our registry platforms work. And it's not the other way around. Regardless if it's a text file or it's an XML-based file. These tables, they're just plain outputs. It's as if I'm putting it simplistic, but choose the format you want to see the table. Is it Excel spreadsheet, Word document, or a PDF? That kind of thing.

So when the last part here that LGR processing tools can be developed to help registers automatically harmonize IDN tables, I don't agree with that line. Again, right, an XML-based is— automatically—will not solve the issue. You still need to parse the XML in order to read the rules and create a machine to read it. I

mean, the beauty of the previous format is that a human can read the rules and have some understanding of how the registry validates IDN domain name. With XML, that's different. Because it's meant for machine to read, to parse, and to make sense of those rules. But you still have to build a machine to read the XML. And our registry platforms predate XML-based formats.

So to jump to a conclusion that moving to an XML-based format helps harmonization, that's a bit of a leap. Again, we can have conversation about the merits of moving to an XML because of other reasons, but jumping to a conclusion that adopting the XML-based IDN table format is a way to ensure harmonization, that's something that I don't agree with. Thank you.

JUSTINE CHEW: Thank you, Dennis. Michael, please go ahead.

MICHAEL BAULAND: Yes. Thanks. I have to agree with Dennis here. The LGR processing tools that exist, they will help with harmonization for those registries that already use IDN tables in XML format because then the harmonization comes for free, so to say. But if you are not using XML format, then these tools will not help very much. And it may sound easy for people to say, well, then just use the XML format, do it. But I actually tried to implement the XML format in our software. As you might know, I'm a technical person. I'm actually writing code for our software. And I looked at that and I looked how much work it would be to implement the full XML format standard. And I said, like, boss, do I have a year for me to

implement that? That may be too much, but it's really nothing that can be done in just a few days. It's a lot of work. And I don't know if all registry platforms will implement that XML format. Thanks.

JUSTINE CHEW: Satish, go ahead.

SATISH BABU: Thanks, Justine. I agree with Dennis that moving to XML is not going to solve the harmonization problem per se. But I see some merits with transitioning maybe over a period of time to XML. First is that XML is forward looking and it is machine parsable, which is an advantage when it comes to maybe bigger tables and avoiding errors, etc.

There are also practical actual issues that might come up. For instance, if you want to transfer domains between registries and one does it in XML, the other does it in ASCII or text, that will create a kind of issue which again has to be resolved through some manual intervention. But if everybody moves to XML over a period of time, then it is forward looking and it is something that we can then automate across these registries. Thanks.

JUSTINE CHEW: Thanks, Satish. Fair point. Pitinan.

PITINAN KOOARMORNPATANA: Thank you. So I would like to add that I also well noted and fairly also agree with Dennis and Michael on it would be a big leap

to say this is automatically help with harmonization. It will help, but it's not totally solved. It still needs some steps to work on as well. And also, I also understand and also note in the comment that this is not easy to integrate with the existing implementation of the system. I just wanted to add some notes on a few things, not in particularly a position just inform what's the tool is available now. A few things.

First is if the tool has an option that you can feed in the text format and it will generate the XML format automatically. So this one can be done, especially for the code point and variant part, perhaps not for the rules, because if input is the description part of the rule, the tools cannot read that. But if it's the text in the earlier format, 3743 or 4290, that one, the tool can generate the XML off of it.

The secondly also is a valid point that XML is actually harder for human eyes to read. But the tools also provide a function that you can see the HTML representation of the XML. So that's also something available. And lastly, the whole tool is actually an open source. So we open the source code as well on the GitHub. So hopefully—to go back to the first point that is need to also integrate it into other system for the registry system. But hopefully it's not starting from zero. We do have the code in GitHub available as well. So just wanted to note this point. Thank you.

JUSTINE CHEW: Thank you, Pitinan. Maxim, and then Dennis.

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MAXIM ALZOBA: I think we are trying to make a mistake because IDN tables, it's a visual representation of the internal logic of how the platform works with symbols, not vice versa. It's not a source of behavior for the system. It's just a picture written somewhere else. How the system behaves is in the logic of the system.

Registry platforms, they do not take IDN tables as input. It's just, I'd say, like a PowerPoint of how things work there inside. Please do not conflate the consequences, like each registry has to write a nice IDN table. And they do it, not because their platform demands that, because ICANN as an organization demands that. And it's just representation. So making it XML or PDF or, I don't know, some other format, it doesn't change the logic of platforms. It just works for engineers and managers to represent this file. That's it. It's not an input for systems. It's just a presentation. Thanks.

JUSTINE CHEW: Thanks, Maxim. Dennis?

DENNIS TAN: Thank you, Justine. Just a quick response to Satish's question. Don't IDN tables have data and rules? Variant logic, that means. So it's a representation, Satish. It does not drive the logic of the registry platform, just as a way of example. The IDN tables, as we conceived it and we have presented a few examples of how they are structured, they have headers and certain rules, whole label evaluation rules, the list of repertoire, the code points that are allowable for registration.

The registry platform does not behave that way. It's not that we see an incoming IDN registration and we put that string through a specific IDN table and check for the rules. The registry platform, at least in our case, Verisign's case, there are certain rules that will apply agnostic, whether it's an ASCII IDN domain name. And we apply those rules first.

And then there are, if it's an IDN, we apply the IDN 2008 rules. Again, agnostic to any specific script or language. And then we go to the language tables that need to be checked in that sense. And that's how the registry has a hierarchy of rules that need to apply in that kind of sequence.

When you see that represented in an IDN table, it looks like each IDN table is independent, which in reality, they are not independent. It's just a representation. And again, the IDN table, as we have seen it and as they are published in the IANA repository, they do not [inaudible] the logic. They're just a representation. We have logic that creates these files for publishing. They're not the means to run the code in our systems. So I hope that is helpful and understand what are the role of these IDN tables.

But my intervention was related to the scope of the question of C6, where this conversation about formats and specifically 7940 comes to play. And C6 is looking at 7940 as a means to solve for the harmonization problem. And it's suggesting that as a method in order to do the harmonization. But if it's not, then C6 also recognizes that registry is already doing some work on this. And if RFC7940 is not the method, then that's up to the registries to solve. We can have, and again, right, I want us to focus on C6. I

heard, I think from Satish, good points about whether we can see XML format as forward looking for interoperability or other use cases, but that's not the scope of C6. So I just don't want to conflate motivations rationale as to why we are, how are we discussing these, to what end, and just I will advocate for keeping our discussions within the context and scope of the question. And C6 is a question that is relevant to the discussion of RFC7940, the adoption of it. Thank you.

JUSTINE CHEW:	Thanks, Dennis. Point noted. So I guess we have to discuss or the group has to kind of work out whether we have a policy that just possibly talks about the need for harmonization as a policy. And this is, of course, still subject to debate. You know, I'm just suggesting one way forward is that if we do have a policy that just states the requirement for harmonization, but how that's actually done could be either prescribed by ICANN, or it could be left to the registrars and registries within the existing practice, or there could be some form of checks done on top of what the existing practice is, but they don't necessarily have to follow the reference rules, the LGRs. So there are kind of different ways to look at it, really.

And in this respect, C6, I think the question is kind of framed a little bit strangely. So Dennis is correct in saying that C6 is not necessarily the impetus for moving things to XML format as a way of dealing with harmonization. It is in the event that for argument's sake that the harmonization is prescribed, then possible efficiency to sit on top of that harmonization as prescribed would be to move it to XML format.

But the question that what happens when the domain names and the variants are transferred between registrars, I think that's a subject of a later charter question. So we'll have to keep that in mind for now. Okay. Ariel, do we have any more?

ARIEL LIANG: Yes, we do. But I think maybe I want to quickly comment on the one about transferring. And I invite Dennis, Michael, and others to chime in. You know, transferring between registrars may not be a bad problem as long as the registry stays the same, because it's the registry that they own the IDN table, they set the rules, and the registrars look to registries to check the label against the IDN table.

So if the registry stays the same, then just based on my personal understanding, I don't think it will necessarily be a problem if it's inter-registrar transfer for that domain. But if the domain is transferred to also a different registry that different registry is used, it may potentially be an issue. But of course, we don't know whether there's any existing cases or data on that. So that's my personal understanding by talking to our experts. And I will welcome Michael or Dennis or others to mention that. But we will have another charter question to deal with the transfer topic. And Dennis, please go ahead.

DENNIS TAN: Thank you. So, yes, as far as I understand, we're going to discuss the lifecycle of domain names in the future or later. But, yeah, the

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registry enforces the relationship even inter-registrar transfers. So, yeah, no issues there.

ARIEL LIANG: Thank you, Dennis. So, the next slide is basically to reflect another anecdote that Zuan Zhang shared on our list about the IDN table developed by the Chinese Domain Name Consortium. And I don't know exactly how to plug in this information based on our flow of the slide deck. But I think it's probably appropriate to include it here just to show you some background and history of the Chinese IDN table. And I'm just going to summarize what Zuan Zhang already mentioned in case some of you haven't got a chance to see his email.

So, basically, the Chinese language community, they use an IDN table that's developed by this organization called CDNC. It's an independent nonprofit organization jointly funded by the four NICs of China's mainland, Hong Kong, Macau, and Taiwan. And the purpose for that organization is to coordinate and develop a consistent Chinese IDN table that can serve the community.

So, the table includes codepoints in simplified Chinese, traditional Chinese, as well as defined variant labels of those codepoints. And it follows the earlier IDN table format, which is specified in RFC 3743, which used the TXT format, I believe. And only the codepoints within the table can be available for registration.

And there's also a rather strict process in terms of to propose an update to the CDNC table. And this shows a process flow is a member of the CDNC has to submit a request to update the table

to the CDNC secretary. And then the secretary refers the request to the expert panel for evaluation. And if the expert panel approves the request, the secretary will solicit comment from other CDNC members. And then the CDNC board will review the update request. And if approved, the table is updated accordingly. So, it has to go through part of a process to update the table.

So, that's just another anecdote, how some tables are developed and the background with that. And I wonder whether Zuan Zhang will have any additional information to share. And just personally speaking, I'm curious whether there's already any kind of harmonization practice that's used in the CDNC table, and also whether you have any information to share with regard to if harmonization is required. Is there going to be a lot of operational implication to that? And just any additional information. But I see Zuan Zhang doesn't have other comments for this. But I just want to make sure everybody saw the anecdote shared by him. And thanks for sharing that.

Okay. I'm not seeing more hands or comments. And I think we have covered all of the background and context to understand the setup, the questions for harmonization. And I think we probably, I guess the group is ready for deliberation to try to address the questions. And I wonder, Justine, do you want to drive this part? Or what do you think? Do you want to give the group a break? Or what do you think? What do you want to do?

JUSTINE CHEW: That's a good question. I think we can make a start. I mean, we still have at least 15 minutes. We don't have to conclude by today.

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We can make a start. And I'd like to possibly get the group members here to recap some of the concerns that they have, or they've actually expressed or supported. So that it's a clearer way that we can take back as leadership team to figure out what to do next, should there be a looking like it's not a consensus. So I'd be happy to make a start on this. And as I said, we don't have to conclude it today. And if you wouldn't mind driving this for now, because I have a couple of things to attend to. Thanks.

ARIEL LIANG: Okay, sounds good. So I'll just start on the discussion questions. And we try to separate that based on who we're talking about. So on this slide, we're only focusing on future applicants. So new applicants that submit application for IDN, and they include IDN tables in the next round or future round, how to address the harmonization related issues. So for the new IDN tables to be submitted by future applicants, the first question is, should harmonization be a requirement? So we want to make sure what we mean harmonization is. In other words, should it be a requirement that the variant relationship between any two given second level labels is consistently defined across all of the IDN tables offered by the proposed gTLD string and its variant gTLD strings? So that's the first question. Should harmonization be a requirement for future IDN tables to be submitted by future applicants?

And then I'll just go over all the three questions and we can start a discussion. The second question is, if the answer to question one is yes, should there be any specific mechanism recommended for harmonization? And a sub question for question two is specifically,

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should the reference LGR be recommended as a reference for developing future IDN tables by future applicants? So that's the second question. And we also want to ask about the role of reference LGR. Is that something our group wants to recommend for future applicants?

And then the third question is, should the XML format as recommended in RFC 7940 be required for IDN tables to be submitted by future applicants? So that's the three questions with some sub questions. And Dennis, I think it does, but I welcome your input whether that's not an accurate reflection of C6. I just tried to ask the question more directly, but of course, up to discussion by the group. So, okay. But I will stop here and welcome anybody to raise hand and chime in directly.

JUSTINE CHEW: Okay. I'm going through the chat. So, Dennis, you seem to express a concern about question three. Are you suggesting a reinterpretation or rewording of the question? I see your hand up. Go ahead.

DENNIS TAN: Thank you, Justine. Yeah, here, number three is kind of presented in a vacuum and C6 really provides context as to why the recommendation of taking or adopting RFC 7940. So without that context, I mean, we lose what we're solving for here, what the charter question is asking for us to solve for.

ARIEL LIANG:	Sorry. I just want to chime in. I think I understand what Dennis is driving towards, is question three probably shouldn't be a question stand by itself. It probably is a more appropriate sub question under question two, because in the context of IDN, I mean, the IDN table format context is in the harmonization mechanism. So that's one of the mechanisms for harmonization as suggested in the staff paper, basically. So it should just be a 2B instead of question three. Yeah, thanks, Dennis. We're in agreement.
JUSTINE CHEW:	Okay, well, I would ask everyone to magically see it as 2B for now, until we've had a chance to fix it for the next call. Do we have any discussion on the question? Okay, Ariel is trying to do her magic now. Brilliant. So, do we have inputs on potential answers for these questions? Do we have any comments based on the background that Ariel has taken us through and all the discussions that we've had prior to this? I see two hands up. Dennis and then Michael. Go ahead, please.
DENNIS TAN:	Thank you. The question of harmonization needs to be looked at and there are two dimensions always. There is a distinction between security concerns and usability. Harmonization deals with or trying to address the security concerns. And that's why we've been presented what harmonization is trying to achieve, which is create consistent set of variant labels across a namespace. And when I'm referring to a namespace, it's a TLD when it's a single TLD or a variant TLD set, right, where the namespace is going to be expanded because of the variant relationship at the top level.

But we cannot speak about harmonization in a vacuum. There's the other side of the question, which is the usability part. And that's where that the variant labels need not to behave identically tries to address that kind of part of the question. Variants sets are consistent, but behavior may be different, kind of balances the security concerns and also usability.

Without going into the weeds, I think harmonization is leaning towards—or no, let me take it back. So we as registries, we're still discussing these harmonization questions, leaning towards being conservative on this end, but we don't have a definite answer. And when I say leaning towards conservative, it's leaning towards making a positive position on harmonization.

As far as how harmonization is achieved, we strongly believe that should be up to the registries to solve for the many reasons I've already described during this call. Thank you.

JUSTINE CHEW: Thanks, Dennis. Michael?

MICHAEL BAULAND: Thanks. Basically, I just mirror what Dennis already said. I'm also in the small group where we discussed this between registries and registrars, although registrars are not really that much related to this harmonization process. But I personally agree we should do harmonization, but we should not enforce or maybe not even recommend in what way this harmonization is being done at the technical level for the registries. Thanks.

JUSTINE CHEW: Thank you, Michael. Anyone else? No one has any comments. No one has an opposing view. Is everyone... Yes, Satish?

SATISH BABU: Thanks, Justine. I was listening to Michael and Dennis, and I can understand and kind of agree with the point that we have to be cautious about this, and I would personally request some more time for discussions because I've not discussed this with the ALAC team.

My personal position would be that harmonization is probably... should be a requirement looking at the future. But as to whether it should be... whether we should recommend any specific mechanism, I think we should largely leave it to the registries and registrars. But we might want to develop some kind of an oversight mechanism to ensure that we validate what they work, basically, so that there is no security stability issues.

And XML, again, I have my reasons why I would like that, it is a good move, but I understand where the registries and registrars are coming from. So at this point, both the mechanism and the XML question, I think we should have further discussions. We have only seen two potential solutions on harmonization. Maybe there are other options available. So I think for A and B, we have to look a little deeper than what we had today. I would think this is a preliminary discussion, and we need further discussions. Thank you.

EN

JUSTINE CHEW: Thanks, Satish. Maxim?

MAXIM ALZOBA: I think backends and registries, if they decide to perform as their own backends, they have to pass through a procedure of technical testing. And we shouldn't add things on top of that, because it's the procedure which shows that, yes, this particular backend behaves as predicted and as required. I don't think we need to add something on top.

JUSTINE CHEW: Okay. Thank you, Maxim. Short and to the point. Okay. I am inclined to leave it there for now, considering it's five minutes to top the hour. I'm happy to give you back five minutes of your time, because I think the leadership team would like to explore some of the other solutions that were mentioned today, and maybe have a look at that in the next call.

Okay. So, once again, thank you for joining this call, and I stand corrected. I'd like to thank all the contributors that have been speaking to Ariel to help her put together this deck, including Dennis, Michael, Zuan, Sarmad, obviously, Pitinan probably has a hand in it.

So you get your chair back next week, I believe. In the meantime, have a good day, night, morning, and a great weekend coming ahead. Thank you.

DEVAN REED: Thank you, Justine, and thank you all so much for joining. Have a wonderful rest of your day.

[END OF TRANSCRIPTION]