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## ICANN Transcription

### Transfer Policy Review PDP WG

**Tuesday, 14 December 2021 at 16:00 UTC**

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JULIE BISLAND:

Good morning, good afternoon, and good evening, everyone. Welcome to the Transfer Policy Review PDP Working Group call, taking place on Tuesday, the 14th of December, 2021. In the interest of time, there will be no roll call. Attendance will be taken by the Zoom Room. For today's call, we have apologies from Eric Rokobauer, RrSG, and Daniel Nanghaka, At-Large. They have formally assigned Jody Kolker, RrSG, and Lutz Donnerhacke, At-Large as their alternates for this call and for remaining days of absence.

As a reminder, an alternate assignment must be formalized by way of a Google Assignment form. The link is available in all meeting invite e-mails. All members and alternates will be promoted to panelists. Observers will remain as an attendee and will have access to view chat only. As a reminder, when using the

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chat feature, please select “everyone” in order for all participants to see your chat and so it is captured in the recording. Alternates not replacing a member should not engage in the chat or use any of the other Zoom room functionalities.

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

Please remember to state your name before speaking for the transcription. Recordings will be posted on the public wiki space shortly after the end of the call. And as a reminder, those who take part in the ICANN multistakeholder process are to comply with the Expected Standards of Behavior. Thank you and over to our chair, Roger Carney. Please begin.

ROGER CARNEY:

Thanks, Julie. Welcome, everyone. I don't have any big updates for the week so I think I'll just open it up for anybody that's had any discussions—any of the stakeholder groups that have had discussions that they'd like to bring forward, any news from the past week or so that they think is relevant and should be discussed here. I'll open it up to the floor and let anybody talk. Sarah, please go ahead.

SARAH WYLD:

Thank you. Hi. Hope you can hear me okay.

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ROGER CARNEY:                    You're a little quiet, Sarah.

SARAH WYLD:                    Oh. Well, that's unusual. Don't hear that very often. So I wonder if Jody's hand is up for the same reason mine is. Yesterday, we had the opportunity to participate in a panel at the NARALO Monthly Meeting. I think it was just a regular meeting of that group. We discussed the Transfer PDP. We also had Michael Palage talk about the history of it. And Daniel, who's not on the call today, also participated. So that was useful and probably there's a recording somewhere. Thank you.

ROGER CARNEY:                    Great. Thanks, Sarah. Jim, please go ahead.

JAMES GALVIN:                    Thanks, Roger. I'll just agree with that Sarah said. I actually wasn't going to report on that. But yeah. It was an excellent meeting. The bit that I'll add is they really had a lot of really good discussion and they were asking some really good questions about the transfer process in general. We were fielding interesting questions of stuff which we've already talked about here. So it's just good that the community was paying attention and we were getting that insight and confirmation that clearly we're addressing issues that are interesting and important to people so all of that is a good thing.

What I wanted to say—what I was going to talk about—was the Registries Stakeholder Group advice. I just wanted to give a quick little update here, just a heads up. We had taken back as an

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action to ask registries in general about their feelings about the change in providing the registrar ID for gaining registrar to the registrar of record. So we offered that question on the Registries Stakeholder Group.

I'm collecting a more formal set of responses so this is a heads up at the moment. And just want to comment and offer that. I think the answer is, generally, that people are supportive. There were a couple of interesting technical issues that came up, which I won't go into here until we can get it all written down and folks can detail it in particular.

But there was a notice about keeping in mind that the IANA ID is only present for accredited registrars. In fact, it's not present everywhere. So for ccTLDs in particular and for service providers who are doing these kinds of things. They have to be able to be compatible with registrars who don't have an IANA ID. So we need to think about that in our technical details about what we do. Other than that, there was generally support for the concept.

Another question that comes up is whether or not to use the existing ID field or to add another field. Kind of had mixed views there. So again, we'll come and I'll lay all of that out. It is important. People did agree that they do want an IETF standard, if you will. They want a technical standard for whatever actually is chosen. So what that means in particular is if we're going to make it a separate element, then there needs to be an extension created and drafted and then posted through the IETF on the standard track.

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Speaking quickly on behalf of the Registration Extensions Work Group in the IETF, which is where that document would pass through, I'm co-chair of that group. That would be a relatively straightforward process. I don't see that being a gating factor for any work that we do, once we decide that we want to go down this path. But it is an interesting point. So there are some questions about exactly what we were looking for in an IANA ID as a technical detail and being concerned about that.

So RFC compliance, generally supportive but acknowledging that not all registrars have an IANA ID. So that's something that we need to address, as far as that's concerned. I think those are the two things that I'll report here, right now. And we'll have a more complete response when I put together some words and send that off to the list. And then we can talk about it more fully as we examine the details of what we're looking for. Thanks.

ROGER CARNEY:

Great. Thanks, Jim, for that. Always good to get the feedback, even if it's not solidified yet—get the feedback and hear any issues. So great. Thank you. Kristian, please go ahead.

KRISTIAN ØRMEN:

Thank you. I do acknowledge that a lot of ccTLDs follow gTLD policies. But I just wanted to note that this policy is for gTLDs and all the registrars have an IANA ID. So I don't think it will be a problem to include it in this policy, even though we do have ccTLDs that would probably follow the policy and where the IANA ID would not be possible. Thank you.

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ROGER CARNEY: Great. Thanks, Kristian. I figured Jim would respond. Jim, please go ahead.

JAMES GALVIN: Yeah. Thanks, Roger. Just to add a little bit of clarity about the Registry position with respect to what Kristian said, he's right. The intent of bringing up the existence of registrars without an IANA ID is not in any way to change the fact that you should have a policy that says you want that, that goes to accredited registrars.

I would say my sense of things is that that issue matters to registry service providers who provide services, and host ccTLDs, and deal with that issue, in addition to the fact that ccTLDs, of course, themselves, as Kristian said, many do adopt and take on board many of the gTLD policies, regardless, and methods and mechanisms.

What's important here is that whatever solution we provide needs to be compatible with the need for that to be available. It needs to be possible for registries to support registrars that don't have an IANA ID. And that's what's required in this discussion. It otherwise doesn't have to get in the way of a principle of making sure that gaining registrar ID gets to the registrar of record. Thank you.

ROGER CARNEY: Thanks, Jim. I'll just add a little more to that. Obviously, that's a great point that needs to be carried into—if that gets to the IETF level of looking at an RFC. It's just a good point to carry into that

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discussion and something that—remember to talk about when that potential RFC is being drafted is to account for that variable concept of some having it and some not. Okay. Anything else that anyone wants to bring forward?

Okay. I think we can jump into the TAC working document. Last week, we got through, I think, about half of the recommendations. And we'll get to the other half today but we want to start back with some edits that some people suggested or comments that people made on the first few. We want to hit those as they're fresh in everybody's mind so that we can discuss them here. I think recommendation one ... I don't know. Emily, do you want to walk us through any of the specific changes?

EMILY BARABAS:

Hey, Roger. This is Emily from staff. Sure. I'd be happy to do that. And I won't go into all the details because some of it is just cleanup based on our last call. Let's start on ... So on page 15, we just made some minor edits that I don't think will be controversial. Starting on the top of page 16, I just wanted to touch briefly on a comment from Theo. Sorry, Caitlin. It's a little bit higher in the document. It's part of the response to charter question B1. So further up, up, up. Sorry. More, more, more. Yeah, where it says "a spike in complaints." Theo, are you available to speak to that comment? I just wanted to make sure I understood the comment.

Just for context, this is where the charter question response says that the group looked at data from Contractual Compliance to see if there were any increases in complaints following the date that the Temporary Specification went into effect. And there's a

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sentence here that says a spike in complaints might have been an indication of security shortcomings that would need to be investigated further. Theo, are you available to speak to that comment?

THEO GUERTS: Yeah. Sure. I don't feel strongly about this but I was reading it and I was going, "Okay. Apparently there has been a spike in complaints. Might be an indication of security shortcomings. Might be an indication of global warming. We don't know that. And further investigation needs to be done." I thought, "What is the value of this comment here?" In my opinion, it doesn't add anything. It's only raising, maybe, more questions. What could have been the indication? And I'm wondering if this is maybe going to prompt an investigation. I don't know. But I was wondering why we have this in here. Thanks.

EMILY BARABAS: Thanks, Theo. Oh. Sorry, Roger. I see you're unmuted. Go ahead, if you want to.

ROGER CARNEY: Yeah. Thanks, Emily. I just wanted to see if anyone else in the group had thoughts on this. I understand what Theo's saying. I think that the reason this was put in here was mostly that we were looking for any changes in that data—not necessarily spike or however—even a drop, whatever that is. We were looking at the data for any big changes to see if they had impacts or not.



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I do understand Theo's concern about the wording here may prompt people to think, "Oh. Maybe we should look at that." So again, maybe a wording change is all that's needed or maybe just taking it out as Theo suggested. But I'd like to hear from others. Keiron, please go ahead.

KEIRON TOBIN:

Thank you. Yeah. Just thinking about this in regards to what Theo said. Maybe he has a point here. Even if an individual who was fraudulent or something did use a registrar that they knew that they could keep getting away with, even if it did come to the point of where it would indicate some form of ICANN Compliance thing, they wouldn't be able to advise on security issues as to what you could do. Maybe it's actually irrelevant and maybe it should be taken out. Thank you.

ROGER CARNEY:

Thanks, Keiron. Okay. If no one else has anything, I think yeah. We definitely need to take a look at it. Either word this so that it's not so inviting or maybe just strike it. Emily, please go ahead.

EMILY BARABAS:

Thanks, Roger. I think we can probably take it out. I think, basically, earlier in the text it says what the group was looking for, was to see if there was some sort of significant change that occurred with that change of events and noted that there wasn't. So I think it's probably okay for now to take it out unless anyone feels strongly otherwise.

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I see a comment from Sarah on the following paragraph. “The working group agreed that, from this perspective, additional security measures are appropriate to protect the RNH, particularly in light of potential elimination of requirements for the gaining FOA.” Sarah wanted to change that to “may be.” The reason we put “are” is because the recommendations that follow directly after the response to the charter question do, in fact, recommend security features. So it follows that the group thought that they were appropriate. But Sarah, if you wanted to speak to why you thought maybe it was a better set of text, please let us know.

SARAH WYLD:

Thank you. My thinking was that first we thought maybe we need more security features. And then we had all of these discussions and then now we’ve come up with these recommendations that do indeed require security features. But that’s also maybe unnecessarily specific. So now that we’ve talked about it, you can resolve my comment and we can all move on.

EMILY BARABAS:

Thanks. Roger, shall I just continue down the list? I think there’s just a couple more on the ones we’ve gone over.

ROGER CARNEY:

Go ahead, please. Thank you.

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EMILY BARABAS: Recommendation two, I see a comment from Theo in the definition, where it says, “a TAC is a token created by the registrar of record,” blah, blah, blah. And Theo has a comment here. Theo, do you want to speak to that?

THEO GUERTS: Yeah. Sure. Let me give you guys a little bit of background. These are just the way how I do things within the working group, if other registrars may find my approach interesting or maybe it’s actually going to help them. But when I see we have so much solid recommendations coming out from a working group, I go sit with the technical people at our site. I’m going to talk to the CTO. I’m going to talk to developers. We actually had such a session last week.

We were going through it and our CTO mentioned, “Okay. Keep in mind, some registries create a TAC now and not the registrar. And you could always also reverse it. It might be good for a working group to have this information.” And I’m like, “Yeah. That could be helpful, maybe.” I’m not 100% sure but I thought I would point it out. Maybe it is more clear that we have that in mind. Maybe it is something for Registries Stakeholder Group to take that in mind, that not all the registries operate on the same level.

So just pointing it out. I don’t think it has much impact. But again, just a little bit of clarification from our technical people. Thanks.

ROGER CARNEY: Berry, please go ahead.

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**BERRY COBB:** Thank you, Roger. I think that's a reasonable question from Theo. I think one of the challenges in policy development, when we're creating recommendations, especially for a process that's complex like this, recommendations need to be broken apart but shouldn't always be considered in isolation.

So I'm wondering if maybe the answer to Theo's question is in connection with recommendation six—at least the preliminary recommendation six. And it basically states that, "the working group recommends that the registrar continue to generate the TAC," so on and so forth. But, "the working group further recommends that the TAC is only generated by the registrar of record upon request by the registered name holder or their designated representative."

I'm not going to say for certain. But perhaps to Theo's point that there's a variety of implementations that occur, my understanding, though, is generally, the current state of today is a TAC or an Auth Code is generated at registration and basically sits there until the Auth Code is requested from the registered name holder, whereas now, recommendation six, if I'm reading this correctly, means that the TAC is only generated upon request by the registered name holder. And specifically, it's stating here that it's generated by the registrar of record.

**ROGER CARNEY:** Great. Thanks. Yeah. And I think that you're right. I think that was the intent. Theo, please go ahead.

THEO GUERTS: Yeah. And to keep it in mind, it was just a suggestion. Maybe these programmers are somewhat binary in everything they do and think. And maybe they just read the recommendation and thought, “Okay. Now the working group is assuming that every registry is operating in the same manner,” which is not the case. That’s probably why they pointed it out.

But if we don’t see any issues in the long term, I don’t see an issue. In fact, I think with the hashing of the keys, I think it’s somewhat implied that there’s going to be work, of course, for every registry anyways. So it’s just a matter of reading it correctly, the recommendation. So I think it will pan out. Like I said, it’s just a suggestion and nothing more.

ROGER CARNEY: Great. Thanks, Theo. Actually, Sarah had commented back, it looked like, and mentioned that maybe it’s as simple as an implementation note about recommendation two and directing people to put this in context with recommendation six. And as Berry said, obviously, all of them need to be taken together. But this specifically, two and six go together well. Okay. All right, Emily. Please take us forward.

EMILY BARABAS: Thanks Roger. The next thing we have is recommendation three. I don’t know if this is a broader conversation that we want to circle back to later but this was about potentially reconfiguring the language of the recommendation to be more specific about the

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standards that will be referenced, specifically the IETF standard. Do we want to talk about this now? It sounded like maybe there was more feedback coming on the list from Jim and others.

ROGER CARNEY: Okay. Thanks, Sarah. It looks like Sarah made a few attempts on this, just to get the timing part in there. But yeah. I think we can wait for this discussion on-list as more information will come for this part. Again, it's really only involving that second sentence on the process of updating these standards as things hopefully "improve" over time. So let's take that list. Thanks, Emily.

EMILY BARABAS: Sure thing. So we'll put that as an action item, as ongoing homework for folks to please comment on that. Recommendation four, nothing there. Recommendation five, there are a couple of new comments. I see a comment from Theo, "These notifications need to be subject to standard EPP poll messages." Anything you want to comment there on, Theo?

THEO GUERTS: Yeah. Actually, I think it could be a big one here. No, actually not. Just make sure that these are all standard to the EPP spec. Thanks.

ROGER CARNEY: Thanks, Theo. I think this goes along with what Jim mentioned earlier on the idea of IANA ID, too. I think that there will be a few

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spec—either possibly new or some updates to some of them. So Jody, please go ahead.

JODY KOLKER: Hi. Just making sure you can hear me.

ROGER CARNEY: You sound good, Jody.

JODY KOLKER: One of the questions I have about this particular recommendation is how do we define when it's a successful or a failed attempt? I think that that's something we need to figure out or to at least define. Is it when the gaining registrar is trying to send in an AuthCode and the domain is unlocked? Or is it when the domain is locked and the gaining registrar is trying to send in an invalid AuthCode.

We could get into some fine tunes here, where if a gaining registrar is just continuing to send in invalid AuthCodes but they've never unlocked the domain name, I'd rather not get a message on that. I would only want to get a message as the losing registrar if the domain has been unlocked by the registrant and the gaining registrar sent an invalid AuthCode. That's just a thought. Thanks.

ROGER CARNEY: Great. Thanks, Jody. That's a good point of clarification. I think the intent was, yes, that it was unlocked, I think, when we thought

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about it. But yeah. it definitely needs to be clarified. Sarah, please go ahead.

SARAH WYLD: Thank you. Yes. I agree that that is an interesting ... Yeah. I also hadn't thought about the lock in this context. Thank you, Jody. I think perhaps the wording "failed attempt" is wrong, where it appears three times in the third and fourth lines because presenting an invalid TAC is not quite the same as "failed attempt." So what if we just reword it to not use that term "failed attempt" and instead refer only to presenting and invalid TAC?

ROGER CARNEY: Thanks, Sarah. I think we still would have to have some wording for an invalid TAC with the lock consideration because an invalid TAC ... Maybe that does work. I don't know. I guess I'll leave that up to the group because. I see what Sarah's saying, is the invalid TAC is ... The interesting thing is if it's not unlocked, and invalid TAC is still ... With no TAC being there, any TAC would be an invalid TAC. So maybe the lock still matters here. Jim, please go ahead.

JAMES GALVIN: Yeah. Thanks, Roger. Jody got me thinking. That's an awesome question to ask. And I'll make a concrete suggestion here in all of this. We haven't firmed up these final details. But, for example, if a TAC is presented by the registrar of record to the registry, thus making a domain eligible for a transfer, I would say that it should be the case that the registry will confirm that there are no



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registrar-set locks on the name. And if there are, then the setting of the TAC would be rejected. So a TAC can not be present in the registry if the domain is locked.

And similarly, if the registrar of record attempts to lock a domain when a TAC is present, that attempt to set a lock would be rejected. We need to invent an error code that simply says you can't have a lock if a TAC is present. You've got to unset the TAC first.

Then, I think, in the case of this particular recommendation, what this all turns into is an invalid presentation—an invalid TAC is whatever an invalid TAC is. If it doesn't match what's in the system, then that's what it is. That's what's collected up. So I like Sarah's suggestion about ... Just change "failed attempts" to "invalid TACs." If the number of invalid TACs reaches some thing, then you have to report that to the registrar of record. So I want to agree with that.

Very quickly, my one-sentence suggestion here is we need to tie ... Somewhere along the way, as we get into details, we need to tie the presence of a TAC with the absence of locks. So we should have that discussion and do that. Thanks.

ROGER CARNEY:

Great. Thanks, Jim. Yeah. That's a good point. That may be another recommendation we add, where we beef up one of the other recommendations with that wording. And as you talk through it, I think Sarah's wording there may be appropriate in this change,

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anyway. But we still have to, as Jody and you mentioned, add that verbiage somewhere. Sarah, please go ahead.

SARAH WYLD:

Thank you. I want to think more about this tie between the TAC and the lock because that is super interesting. It feels new. Have we don't this before? It feels new. So what if we have a case where somebody wants to get their domain ready for transfer but they don't want to unlock it until the actual hour that they're doing the transfer. They want to get their TAC today. And then tomorrow, they're going to sit down and transfer it. That seems like a reasonable use case. I'm hearing hesitance to tie these things together but I like that we're talking about it. Thank you.

ROGER CARNEY:

Thanks, Sarah. Yeah. I agree. Good to talk about it. I assumed that they would go hand-in-hand. But as you mentioned, obviously there are scenarios where maybe it makes sense not to. I don't know. That's up to the group to decide if those should be locked together or if—locked. Ha ha. I guess, pun not intended—tied together there or if they can be separated. Good point. Theo? Please go ahead.

THEO GUERTS:

Yeah. I think I'm going way into the weeds here. Just stop me if I'm actually going into the deep beyond here. But reading as it is now, I think I'm okay with it. Gaining registrar presents an invalid TAC to the registry. Do we also include or imagine that goes for info commands? Usually, that transfers if you want to do an info

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command. Some registries require to you present them with the correct TAC to even obtain that information. So if you provide the incorrect TAC, you can't do even the info command. Do you want to count that or did we already incorporate that into this language? What is everybody's feeling? Thanks.

ROGER CARNEY:

Great. Thanks, Theo. Interesting. And a lot of transfers do happen to do that info prior, though, I think that maybe that's outside the scope of this but obviously something we should talk about. I don't know if it really, specifically, is transfer-related or not. Others' thoughts on that? Jim, please go ahead.

JAMES GALVIN:

Yeah. Thanks, Roger. Since you asked for thoughts, I'm just thinking through this a little bit and pulling on this thread of tying together locks and the TAC. As a practical matter, what occurs to me ... And I saw Owen's comment in the chat about, "Well, I literally unlock right when I'm about to initiate the transfer." That really got me thinking that Owen's a super-user. And I think the reality is we have to think about the more general volume case. As a practical matter, that kind of situation is simply not going to exist. I guess I question that.

Maybe I'll raise that as a question. Is that really the customer that we're trying to appeal to here? It feels to me like if I'm going to do a transfer, then I initiate the transfer, maybe in the background. You don't even necessarily have to tell the user. Well, you probably do. I don't know. Registrars, you guys, you know your

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customers. You have to figure that out. But you know that you have to undo the locks and set the TAC. And at that point, the user is taking some responsibility for that TAC.

What threat are we protecting against by allowing these things to be uncoupled and putting the user in a place where they've got to do the right thing. You're assuming that your users are all as smart as Owen in knowing about locking at the right time, or unlocking at the right time, and getting their TAC, and doing all of that. I think it's more likely that you want simple principles like, "I've requested a transfer. Okay. Give me my TAC. Good. It's going to work. Let me just go over here and get it done and I'm all set."

I don't know. I raised that question. I'm just thinking that through a little bit. And registrars, obviously, would have better experiences with their customers. And they have thoughts about how all that works. But I'm just thinking that, as a practical matter, it doesn't feel like the option is going to serve a broad community here and simplicity feels better to me. That's just my personal opinion. Thanks.

ROGER CARNEY:

Thanks, Jim. Yeah. And I think that Owen is the gold standard so we'll always leave it there. But I think you're right, in that the majority ... And I think looking at how Owen does it today is slightly different than how we're proposing it for the future anyway. Owen has the AuthInfo today and then he unlocks it when he transfers it. So it's something where we're only creating the TAC

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at transfer in the future. So I think that that's one slight difference that we're looking at.

And to your point, Jim, I think the majority of registrants may be aware of locks, maybe not. But they don't actually manipulate the locks. The registrar does that for that. So I think that that's a good point to bring up and to think about. Kristina, please go ahead.

KRISTIAN ØRMEN:

Thank you. I don't think there is a need to tie them together. Registrars work in different ways. Many registrars don't have the lock on at all. And since now that we're not going to have the TAC present at all times, maybe the lock is no longer needed. Maybe registrars would like to have the domain unlocked only for one hour when they transfer.

I think we need to untie them and make sure that we have all the options available so this would work great, both if you are the bank registrar, like MarkMonitor, and you are the retail registrar, like myself and so on. I think it seems unnecessary to tie them together. Also, again, it would create work in the systems that we don't really need. Thank you.

ROGER CARNEY:

Thanks, Kristian. And I would say in today's policy, it's an "or," that the registrars must remove the locks or provide the registrant—I don't know exact wording—reasonable access or something like that so that they can remove the lock on their own. So maybe you're right, Kristian. Maybe it's not that they have to be explicitly

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... tied together. Maybe we keep that same concept of the “or,” where the registrar removes the lock or provides that.

But we still get back to Jody’s issue of ... He doesn’t care if the domain is locked and someone is trying to send in TACs—not that he doesn’t care. He just doesn’t want a notification when that occurs, if the domain is locked. So Kristian, please go ahead.

KRISTIAN ØRMEN:

I think the gaining registrar can quite easily see if the domain is locked and not try to transfer it at all. Why? I have several companies in the group I work in at Larsen Data. So we actually don’t even take a transfer from a customer if the domain is locked. We just give an error, says it’s locked. They have to unlock it at the current registrar before even ordering, while if I remember correct, with [.com] people can order the domain. And then later, we will tell them that it’s unlocked and they would have to unlock so we can restart the order that they already made. But it’s an easy check for the gaining registrar to see the domain is not transferring if it’s very clearly locked in the WHOIS.

ROGER CARNEY:

Thanks, Kristian. Taking all that into account and looking at recommendation five here. Updating that from “failed attempt,” I think everybody was okay with. But do we need to be explicit of invalid TAC here, in that if a registrant has access to the lock, and it’s locked with a TAC being present, is that an invalid TAC if the gaining registrar is passing that in? Kristian, please go ahead.

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KRISTIAN ØRMEN: If the TAC is correct and the domain is locked, then it's not an invalid TAC. It is an invalid attempt. But we don't need to know that. If the TAC is correct, then just domain locked. Mostly, the gaining registrar would need to know the domain is locked. That's why it doesn't work. The losing registrar does not need to know that that is a failed attempt because the TAC is correct. So it doesn't really matter for the losing registrar that there was a failed attempt since the code was correct. Thank you.

ROGER CARNEY: Thanks, Kristian. Jody, does that solve your issue with that as well? Jody, go ahead.

JODY KOLKER: Thanks, Roger. I'm not sure I quite understand what Kristian was saying there. I just wonder if he could repeat that.

KRISTIAN ØRMEN: It only matters, if the TAC is not correct, to send a notification to the losing registrar. If the TAC is correct but the domain is locked, the losing registrar does not need to know. I think I was saying that.

JODY KOLKER: I agree with that, Kristian. Thanks for redoing it.

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KRISTIAN ØRMEN: Okay. So what are other thoughts on this—if the only time notification is required is if the TAC is invalid. I don't know if we provide any direction on what invalid means or we just leave that alone, in that it's maybe self-explanatory there. Sarah, please go ahead.

SARAH WYLD: Thank you. So yes. I think that the word “invalid” is clear enough to mean that it's not the TAC that matches what's on the domain in the registry. But we could include an implementation note if that's useful. The other thing I wanted to just bring up ... So I added a word “provision” here— “Invalid TAC provision—” because that's what we're notifying about or being notified.

And then this, I just wasn't really sure. Yeah. So if we look at the comment that I left, the sentence says every time they submit an invalid TAC, as long as the TAC is present on the domain, then the registry has to notify the registrar. But then if they already followed this part, resetting the TAC, but then the gaining registrar keeps on trying to grab the domain with a wrong TAC, then does the registry stop notifying the losing registrar of the continued attempts, even though they are still continuing? What was our intent? Thank you.

ROGER CARNEY: Yeah. Thanks, Sarah. I think the try at this wording was so that we don't bombard with too many notifications. I think that's the reason we were trying to come up with wording for this. Others recall, have issues with that? Okay. Sarah, when you put in “provision,” it



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made me think of the start and not the middle. So I wonder if “provision” is right. The only reason I say that is because it seems like we’re telling the registrar of record, who’s the one that created the TAC to begin with, of an invalid TAC provision. It’s an invalid TAC usage or something along that line.

SARAH WYLD:

Sure. Yeah. Maybe “usage.” As Emily was suggesting, maybe “presentation,” because it matches the word at the beginning of the sentence. Those are the things that need to be ... If they present an invalid TAC, then you have to notify the other one that it was presented. We could even say “notify the registrar of record of the presentation of an invalid TAC,” just making the sentence longer and longer. But maybe that is more clear.

ROGER CARNEY:

Okay. That makes sense. And using that same word ties it back together, as you pointed out. Okay. To your point, Sarah, I think that part of “and for each successive attempt to present” needs to be ironed out because I’m assuming registrars would not want to know if a gaining registrar had tried 1,000 times and they get 1,000 notifications, which is what I think that says. Sarah, please go ahead.

SARAH WYLD:

Thank you. Yeah. I’m just thinking ... So in the first sentence, is the issue that an invalid TAC is being presented or is the issue that a transfer is being requested with an invalid TAC? Maybe that’s how we do the sentence is, “If the gaining registrar requests

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a domain to be transferred with an invalid TAC, then ...” So maybe it’s along those lines. And then we would be notifying of the transfer request, including an invalid TAC. I’m actually not sure if that makes it better.

And then yeah. I think as long as the TAC is present was intended to remove the requirement to notify after the TAC has been nulled out, even if the transfer attempts continue. I’m just not sure that it’s written clearly enough. Thank you.

ROGER CARNEY:

Great. Thanks, Sarah. On your first point, I don't know if that made it clear or not. So I think we'll leave it here for now. But yeah. To the second part, again, try to get that clarified and figured out. Kristian, please go ahead.

KRISTIAN ØRMEN:

Thank you. Just to be sure what are trying to solve, I would like to ask a question, probably for Jim or any other registry. Would a registry actually allow 1,000 requests? Wouldn't that registrar, if you have 1,000 invalid requests ... I know some registries would cut us off. Mostly, I know that because I tried it before because of a bug in the system.

So I'm just thinking what are we trying to solve? If there would be so many attempts on a domain name, I think there would be some alarms in some systems and some people would hopefully shut it off. I don't know that should be, maybe, solved by this but maybe just normal security at any registrar and registry.

ROGER CARNEY: Thanks, Kristina. Theo, please go ahead.

THEO GUERTS: Yeah. A couple of pointers here, following a little bit along the line what Kristian said. I agree. I think most of us have already conditions in place, precautions in place to monitor large amounts of TAC creations or TAC requests, not just to prevent brute force attempts but for the simple reasons that the resources at the registry are not infinite. They are not unlimited. Most of the registries have a certain amount of EPP commands that you can do within a registry system. It's not unlimited. You cannot send 5 million commands an hour. You're going to be shut out anyways.

And example here, there are sometimes resellers who totally mess it up and send in a bunch of commands. And if you just shoot that to the registry, you have a real reason or a real situation that the registry will temporarily shut you out. That has major implications for all your other customers on your platform. They call these things SRS platforms. That means they are shared registration systems. And sharing means you share a limited pool of resources with everybody on your reseller SRS.

So there's already ... For most of us, you don't want a customer to go haywire on your system. Secondly, when you take the amount of brute force attempts, I don't think that is really happening on the TAC level. If there is evidence for it, I would love to see it. And final point, the way it reads now, "The registrar of record must

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notify the RNH that failed attempts have taken place and may take additional action.”

If you’re going to take this path down again, you are going to hire a lot of support staff as a registrar because those registrants, they’ll make mistakes and they will get confused. If a reseller makes a mistake, you will get extra load. And like we discussed in the prior meeting, registrants can mess up a transfer 70 times in a row by not typing in the correct AuthCode for whatever reason. Thanks.

ROGER CARNEY:

Thanks, Theo. I know, just to that point that Theo mentioned, I know I have heard several people talking about looking at this three to five number and looking internal to their own systems and seeing if that’s a good number, or really, if that number is closer to 7 or 10 or something more realistic. As Theo mentioned, you don’t want to increase workload across the Board for something that’s commonplace.

So I know that there are several people looking at that. Hopefully, we get some feedback from those that are looking at that and seeing if that number should be higher, again, to account for common use. Jim, please go ahead.

JAMES GALVIN:

Yeah. Thanks, Roger. I want to separate two things. I think we are talking about them separately but I want to draw a bright line between them here. The way I think about this question of what a good number is or what a best practice number is for the number

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of invalid TAC things is this is about security. It's not about operations. And I think that we should think about this number in those terms.

I think that the operational concerns that we've talked about there ... Are there limits at a registry? Do registrars whose business model is largely having lots of resellers ...? They're going to have their own operational principles. They're going to scale all of their systems appropriately for whatever their customer base is. You have to assume a registry is going to scale according to the number of registrars they have to support. All of that is going to take on its own life. And that will be handled appropriately by the market.

I think the issue here to be considered is, from a security point of view, what do you think is reasonable? How many times should a user be allowed to make a typo. You can look at industry standards across the board in this kind of space. 10 seems to be an obviously maximum that I've seen from user interfaces. But there are numbers. There are reasons why one might make it lower. 10's a pretty common number as an absolute, which means you get locked out. After 10, you're just done.

But I think, from a practical point of view, yeah. You allow a user to do this a few times, inappropriately and assuming it's all the best of intentions. And it only has to be a few. I've seen as low as three as a pretty common number, too. Especially in financial services, three is a very common number of ... You're locked out after three. If you can't enter your password or whatever after three attempts, then okay. You now have to go through a process to clear all of that.

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So I don't think users are going to be ... I don't know. There are always going to be people who don't know. But I wouldn't think about this problem in terms of operational concerns. I would suggest thinking about this problem in terms of security concerns. Pick a number that seems to be right for this industry. And I would suggest somewhere between three to 10 is the right number because those are common values in industries across the board. Thanks.

BERRY COBB:

Thank you, Jim. We just caught word that Roger needed to step away. So if there's no objections, I'll go ahead and lead the call to conclusion. And Emily and the rest of the staff will be taking the notes and doing what they do. So I think we've got about 34 minutes left and we're still working on rec five. Theo, I see you're in the queue. Please go ahead.

THEO GUERTS:

Yeah. I'm going to slightly disagree with Jim here, more in the sense like this recommendation came out of the thinking about brute force attacks. How realistic is it? How many attempts do you need for a brute force to get anywhere when we have a very secure TAC? I assume that the TAC that we are going to create is going to adhere by minimum security standards.

So in my mind, you will need to have a lot of attempts to steal that one domain name or multiple domain names. And even if you do multiple domain names, it's going to be still very, very hard to do that. So you need to send a massive amount of requests to a

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registry. You're going to be shut out anyways. If you just shoot in 100,000 requests, within a minute, you're going to be shut out. There's no registry that's going to accept that. So if that takes place, you're going to be on hold anyways. And your operational team is going to be on high alert, figuring out what the hell happened.

So I think the registry notification makes sense, like, "Okay. You've been shut out because somebody just sent in 100,000 requests in a minute." That's not acceptable. So I think we are shooting way beyond the mark here with this recommendation. Thanks.

BERRY COBB:

Thank you, Theo. If I could maybe offer up a suggestion here, my takeaway from this conversation is we're trying to pack too much into recommendation five. If I understand correctly, there are plenty of reasons why an invalid TAC would be sent from the gaining registrar through the registry, many of them likely due to error from the registered name holder.

And I believe, as Theo puts it, that most likely the gaining registrar is going to be monitoring for that one way or another in attempts to correct the error, whether that be recognizing that the domain is still locked or that the TAC does not match what is housed at the registry, versus what I think the last two interventions are about, where we're getting to brute force kinds of malicious attempts from bad actors to attempt to conduct a transfer.

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Is it worth trying to separate these two issues? I think, Jim, you made one point. Some of that seems operational versus what are some security enhancements that we can make. So is it worth staff maybe trying to do a recommendation 5a and 5b and we circle back on this to separate those concepts out and see if they still survive the group's understanding and direction?

Stunned with silence? Was I wrong in saying any of that? Did that not make any sense or should we perhaps just set this one ... All right, "Silence is a virtue." Sounds good. All right. Yeah. I think maybe the action here is to split these two again. We'll circle back when we meet again on these two—see if we can make it more clear and precise. I guess the precision introduces clarity.

And in the meantime, I do welcome, or staff welcomes, any additional comments you want to add here to help staff dissect the two concepts. Okay. So any last-minute party thoughts on rec five? Maybe we can move on to the next recommendation, which I believe is six. Great.

Okay. So I'm going to try to steal Roger's style here—just a quick read of the recommendation. "The working group recommends that the registrar continue to generate the TAC, set the TAC in registry platform." Emily has her hand raised so please go ahead.

EMILY BARABAS:

Sorry, Berry. I was wondering if we could just back up to one additional exchange that came into the comments last week after our last call in the response to the charter question and just give Sarah an opportunity to comment on that.



BERRY COBB: Yes, please. Go ahead.

EMILY BARABAS: Sarah added some text to this paragraph where we start, “The working group ultimately did not identify a compelling reason to shift ownership of the TAC to the registry and therefore determined that the registrar should continue to generate the TAC, set the TAC in the registry platform, and provide the TAC to the RNH or their designated representative.”

You can see that Sarah suggested a few words here for clarity. And then she noted ... Oh. And Roger responded whether “provide” would be a better a word than “set.” And then Sarah responded as well but I’ll let her speak to her comments since her hand is up. Thanks.

SARAH WYLD: Thank you. Okay. So a couple of things on this one. My suggested wording was not intended to change the meaning of the rec but rather to make it more clear as to exactly what is happening. So the registrar generates the TAC. The registrar sets it in the registry platform and provides it to the RNH. Without the extra wording, it sounded like we are generating, setting, and providing it all to the RNH. And it didn’t indicate that the middle part happens in the registry and I think that’s important. So that’s the same wording change in a couple of places.

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And then the second part is that I think Roger might have lost track of one of our recommendations because what he was referring to, I think, is the current process. And actually, I'm not even sure of that. I don't know. Not quite sure. But I think that the registrar does generate the TAC. Thank you.

BERRY COBB:

Thank you, Sarah. I don't see anybody else in the queue and I don't believe anyone is objecting to the possible edits. This is summary detail text leading into the recommendation. It does seem a little odd that it's practically replicating recommendation text. So maybe we want to also refine that. Or maybe it's even better put in the bulleted form that there are several high-level steps that are being described here.

Any other comments in relation to Sarah's intervention here? Definitely, Sarah is correct, at least based on what rec six will amount to. If, for any reason, today the registrar isn't creating the TAC, rec six is making that change.

Okay. So I'll continue on, just reading the latest text and then we'll open up the queue. So, "The working group recommends that the registrar continue to generate the TAC, set the TAC in the registry platform, and provide the TAC to the RNH or their designated representative. The working group further recommends that that TAC is only generated by the registrar of record upon request by the RNH or their designated representative. After confirmation that the TAC has been successfully set at the registry, when the registrar provides the TAC, it should also provide information about when the TAC will expire."

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My initial read on this, this is probably one of the core changes that this group is considering from current state to desired state. What I might also recommend—and I think that this is maybe a pending action from staff. But we really have recommendations compacted into just recommendation six. I think that this seems like this is a pretty good candidate for a 6.1, 6.2 and 6.3 so that they're perfectly delineated about the specific changes.

So I'm going to open up the queue. Any heartburn, consternations about the substance of recommendation six? I think that there's at least initial support about splitting it apart into three recommendations, the first being that, essentially, the registrar is the Contracted Party setting the TAC. The second is that the TAC is only generated by the registrar of record upon request. And then the third is once it's been confirmed by the registry that it is hashed, we'll set a TTL or a time that it will expire. Emily, please go ahead.

EMILY BARABAS:

Thanks, Berry. I just wanted to note also ... This is an older comment but I don't think it's one that's been discussed yet from Jothan, on the final sentence, where it says, "After confirmation that the TAC has been successfully set at the registry, when the registrar provides the TAC, it should also provide information about when the TAC will expire."

And Jothan says, "Should this happen chronologically, only after it has been successfully been set with the registry, in order to ensure it works in harmony with any minimum standards of the registry?" So I don't know of there are any comments on that or

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folks would like to suggest any edits as a result of this comment. Thanks.

BERRY COBB:

Thank you, Emily. In response to Jothan's comment here—and I think Jim would probably agree as well—there's been an underlying theme about the timing of all of this when we put it all together. I think that's still going to be an important aspect for this group to consider when we string all of these recommendations together.

And what I'll note, just as a reminder, again, I'm still working on this beginning-to-end swim lane process diagram that I hope will flesh out the order and at least somewhat try to represent the timing that would take place here. But I'm probably not going to have a draft ready for the group until the early part of next year. I'll put my elves on it over the break.

Any comments in relation to what Jothan had mentioned here? I think it seems straightforward. There is an inherent predecessor type task going on here that naturally produces the timing that I believe that Jothan is getting at. Hearing and seeing none, okay. Not seeing any other objections.

Let's move on to recommendation seven. The working group recommends that when the registry receives the TAC, the registry must securely store the TAC using a one-way hash that protects the TAC from disclosure. I see Sarah's comment here. And just based on our possible splitting of recommendation six, that maybe seven becomes a 6.4 to keep the cadence or order in cohesion

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here. But Sarah's comment is basically questioning whether "disclosure" should be "unauthorized access" or "unintended access," or "unintended disclosure," which I believe Sarah also likes.

I guess the question for the group, is there a difference to you about "access" versus "disclosure?" James puts in here, "disclosure is fine." So "unintended disclosure would be what was on the table for this particular wording, I believe." James, please go ahead.

JAMES GALVIN:

Thanks, Berry. I'll just speak out loud the little bit of comment that I added there in the series and elaborate a bit. I actually think that "disclosure" is the right word. We're talking about all forms of disclosure. It's not about access because anybody could access a hashed value. It doesn't give it away if you access the hashed value. The intent here is that it comes in. It's immediately hashed and put away. And then it's never seen again and you actually don't know the value, can't recover it. If you forget it, just got to create a new one kind of thing.

So I don't think the distinctions between "intentional," "unintentional," "access," any of that. From a security point of view, I would say that none of that applies. "Disclosure" is the right term, just 100%. You just want to get it hashed and then it's hidden away and not available. And so I think that's the right thing. That would be my advice in all of this. Thanks.

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BERRY COBB: Sarah, is that amenable to you since you started this thread on the comment.

SARAH WYLD: I'm really sorry. I had stepped away for one second. Did you just call on me? I'm so sorry.

BERRY COBB: No worries. Jim had just provided some rationale about just maintaining the single word of "disclosure" instead of the use of "unintended" or "unauthorized."

SARAH WYLD: Right. So any disclosure is unauthorized. I hadn't thought of it that way but I think I like it. I think I like it. Yeah. Maybe let's leave the comment open and just see what Roger thinks. But I'm feeling better with that information in mind.

BERRY COBB: Okay. Great. Thank you, Sarah. Maybe worse case, we can also provide a footnote to make it clear, if need be, that the intent here is that the disclosure only happens when the un-hashed code is used to validate the transfer. I'm curious. Is there a word that un-hashes a hashed code? Is there even ...? Never mind. I'll just stop there. All right. Any other parting thoughts on rec seven before we move on to eight? Okay. Got it. Thank you, James.

All right. Recommendation eight. I don't believe we have any comments here. Just to read it, though, "The working group

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confirms the following provision of Appendix G: Supplemental Procedures to the Transfer Policy contained in the Temporary Specification for gTLD Registration Data. 'Item four. Registry operator must verify that the AuthInfo code provided by the gaining registrar is valid in order to accept the inter-registrar transfer request.'

There don't seem to be any issues with confirming this. But of course, maybe we do need to add an additional sentence that if this is going to become part of the transfer consensus policy, that "AuthInfo code" would be replaced with the TAC. I see Sarah plus-ones that additional change. So maybe we just make it ... "With appropriate terminology updates." All right. Great. That sounds like a clear enough instruction for the recommendation.

Okay. Moving on to recommendation nine. "The working group recommends that the TAC may only be used once. Once the registry operator has verified that the TAC provided by the gaining registrar is valid, in order to accept an inter-registrar transfer request, the registry should set the TAC to null."

I believe we have a comment here from Sarah, "Is this clear enough? Should we add something to indicate that this happens after the transfer is completed. Roger seemed to agree, offering up, "The registry should clear the TAC instead of 'null,' to allow flexibility." Any comments? Sarah and then Kristian, please.

SARAH WYLD:

Thank you. It's interesting because in the past, there were two separate things. One is providing the TAC and the other is moving

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the domain. But now, we're going to have ... All of that happens at once, that the TAC provision is what then tells the registry—or the registry does then go move the domain. I guess there's maybe separate EPP commands.

Here, I wonder if the reader of this recommendation or eventual policy will be confused by ... It's providing the TAC but it's also moving the domain. After the domain gets moved is when the TAC gets nulled out. I hope that helps to explain my comment. Thank you.

BERRY COBB: Thank you, Sarah. Kristian?

KRISTIAN ØRMEN: To first answer Sarah and then another comment afterwards, I think it depends on how we are going to decide on the losing FOA because if we decide to keep losing FOA, then when the gaining registrar sends in the TAC, if the transfer is denied in the losing FOA, the TAC has been used once but the domain is not transferred.

While I personally prefer we skip the losing FOA, that would not be relevant. But right now, when we're looking at the recommendation, I'm not sure if we decided on the losing FOA yet. So that could be a valid thing. It could be, actually, that the TAC is used once but the domain was not transferred. But maybe someone else can tell me about that.



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And then, for my lack of English, I need someone to explain me what the difference is to clear the TAC or to null the TAC because I don't know the difference. Thank you.

BERRY COBB:

Thank you, Kristian. I think I can partially answer your question. Null, as I understand it, means that you're deleting the value of that field—the contents of that field. And by default, a field with nothing in it is considered null. But that's more a techy description than maybe a policy description. And in counter, "The registry should clear the TAC" is a more Americanese-type way of saying that. Hopefully James has raised his hand and will enlighten us with, maybe, more proper wording on this part.

Before I do that, to turn it to James, to Kristian's first point about the connection to the losing FOA, and to Sarah's comment in the chat, it seems like the group is moving towards what you suggest—that the domain is moved right away. But we haven't fully decided that yet so we may need to just put a pin on this one to make sure there's a tight connection when we go through the losing FOA draft recommendations again. James, please go ahead.

JAMES GALVIN:

Yeah. Thanks. I made a comment in the chat about the TAC, clear versus null. What I really wanted to suggest here—the reason why I raised my hand—in thinking about this recommendation nine, I've listened to a number of discussions about making sure we're clear about all of the steps, and the order in which the steps have

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to occur, and what they mean. What occurs to me here in recommendation nine is a suggestion to not be overly prescriptive about exactly what it needs to look like on the back end with the registry.

I would suggest that the policy should simply state that the transfer needs to complete and that the following things need to have happened in order for it to be complete. That is that you have received TAC from a gaining registrar. You have validated it. You have effected the move, whatever that means on the back to the registry. They have to do something so that the move is real. And there are a couple different ways to do that, depending how registry implements their back end. But I'm sure you all know that because you do something similar on your ends. So leaving that, you just want to state the requirement, not the prescriptive rule.

And then, of course, the third part of this is clearing the TAC. That's because of the overarching principle that presence of the TAC means it's eligible to transfer and lack of the TAC means it's not. Wow. Don't say that too fast, three times. But my point is, think of it as an idempotent operation on the side of the registry and don't be prescriptive about the sequence of steps. Be policy about what you expect to have occurred in the step that needs to happen. So that's my suggestion. Thanks.

BERRY COBB:

Thank you, Jim. In reaction to your comment there, as Emily noted, is "should clear the TAC," or I was maybe even going ... This probably isn't the right word. But to try to not be too prescriptive, like what we currently have in the text is that ... In

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essence, what we're trying to say is once the TAC has been used, it's no longer fit for purpose. You can't use it again. And there might be a variety of ways registries would do that.

So would it make it more clear to say something along the lines that, "Once the TAC is used, it can no longer be used again," in very long-speak? When I look at what Emily posted in the chat, "once the transfer is complete, the registry should clear the TAC," that still seems pretty prescriptive to what James had suggested. Could a registry decide to, instead of clearing the contents, to have a flag that invalidates it or makes it no longer usable but wants to maintain it for recordkeeping or something along those lines? Or is the group just happy with what is suggested, "Once the transfer is complete, the registry should clear the TAC?"

I see Jim is typing in the chat—I mean on the document. Sarah, please go ahead.

SARAH WYLD:

Thank you. It's really interesting. I was going to say I think they should just clear it. So then, the question is, is there some need to have logs of what the TAC was at a certain time so that they can indicate of the right TAC was provided or not? But you don't need to know what the TAC was. They actually don't know what the TAC was because it's hashed. All we need to know is whether the TAC that was provided at a certain time matched or didn't match. So I don't think there's value in keeping a historical TAC. They should just clear it. That is my suggestion. Thank you.

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BERRY COBB: Very good. So I see that James has put in a suggestion on rewording of recommendation nine that, “The registry operator must clear the TAC as part of completing the transfer request.” That seems short and sweeter, my first reaction. Any comments from the group? We’ve got about four minutes so we’ll probably conclude on rec nine and circle back next week on this. Kristian, please go ahead.

KRISTIAN ØRMEN: Thank you. I think the new text looks good if the losing FOA is gone. But if we end up having the losing FOA, I think we should really consider if the TAC should be still valid after a first transfer attempt that was denied in the losing FOA. But if we stop with the losing FOA, I think this text is good.

BERRY COBB: Great. Thank you, Kristina. Oops. Sarah, please go ahead.

SARAH WYLD: Sorry to interrupt you, Berry. If I could just respond to what Kristian said. I think that this new text does that because clearing the TAC doesn’t happen when the transfer first is requested at the beginning. It happens at the end of it, as part of completing it. So maybe that addresses it. Thank you.

BERRY COBB: Thank you, Sarah. Perhaps we could even make it more precise, that the registry operator must clear the TAC once the transfer

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request is complete. Part of completing might suggest that it's not quite complete yet. Just a thought. James?

JAMES GALVIN:

Thanks, Berry. Just to restate what I had said before, I guess the question before the group here is how prescriptive do you want to be about the exact sequence of events. And then I would ask what you're trying to achieve. Let's be careful to think about why we need things to be in a certain order, in a certain way. My thinking, at the moment, is, again, that we don't have to be prescriptive on the part of the registry in terms of the sequence at which the events take place. I can't think of a reason, right now in this session at the moment, for why that would need to be the case.

So that would be the question that I would ask, as we go forward. If you want to say something like, "It has to be cleared after the transfer is complete," you're now being prescriptive about exactly the order and sequence of events. Why is it important for it to be done just that way as opposed to a registry having the option, based on however it has implemented its services to properly execute the three things that have to happen?

One is taking it in. Two is actually effecting whatever the transfer is—whatever you have to do to make that happen. And three, of course, is clearing the TAC. Think of them as an idempotent step, completing the transfer, and let the registry figure out what order to do those in so that it happens and everything works as you would like it to. So thanks.

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BERRY COBB:

Thank you, James for correcting me breaking part of your prescriptive rule. So I think we'll let this marinate until next week and we'll maybe pick this back up. And I'd ask Emily. Maybe just put a reminder comment. Let's circle back to do final confirmation of this when we confirm the losing FOA outcome from that discussion. So that draws us to the end of the call. We'll pick up on 9, 10, and 11 and hopefully be able to close this out next week and then pick up the next topic. Thank you, everyone, and we'll talk to you next week. Take care.

**[END OF TRANSCRIPTION]**