ICANN84 | AGM – IANA: From Origins to Horizons
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TANIA HOPKINS: Hello and welcome to IANA: From Origins to Horizons. My name is Tania Hopkins and I'll be your participation manager for this session.

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other than English, and speak at a reasonable pace to allow for accurate interpretation.

Thank you and I will now hand the floor over to Kim Davies.

KIM DAVIES: Thanks, Tania. Hello, everyone, and thank you for joining us at this session today. I'm Kim Davies. I'm head of the IANA team. I'm joined by Marilia who is our director of strategic programs.

Today we're going to give you a presentation that seeks to accomplish two primary things. One is to just give you a general explanation of what IANA is and why IANA exists. And then we're going to talk a little bit about future plans for the IANA functions. Next slide, please. There we go.

Just to make this slightly interactive, and it's the first time I've done this. I know other groups do. Here's a little interactive exercise for those in the room. If you can either scan that QR code or if you go to menti.com and enter in the 8-digit code there, a quick quiz. What's the first word that comes to mind when you think of IANA. Let's just try this for half a minute and then see what the reactions are.

All right, well, that's a good little sampling. And I can confidently say I think we're going to use every single one of these words in the next 60 minutes, so that's a good start. Hopefully, you'll have an improved understanding of what we do after this session. All right, let's move on to the next slide, please.

To start the discussion about what IANA does I found it useful when I give these kinds of presentations recently to go back to basics and talk about a transaction that most of us do every day which is accessing a webpage. By looking at something very fundamental to the way we use the Internet today, it helps explain how the Internet works to a certain extent but also the role that IANA plays in the operation of the Internet.

When we visit a webpage, here is a sample webpage of www.identifiernews.com, if you access a webpage like this presumably by typing in a link at the top of the page or clicking on a link from somewhere else, a series of transactions happens in the blink of an eye between you entering in an address and getting the content that you're looking at. By exploring those transactions that happen in the span of this very simple thing that you might do, you'll get a better understanding the role that Internet identifiers play and IANA's role in administering them. Let’s go to the next slide, please.

When we talk about Internet identifiers there are some really obvious ones from the very beginning which is the web address itself. A web address, more formally known as a URL, contains two different types of identifiers. One I think will be very familiar to everyone at the conference this week which is a domain name. A domain name is obviously a human readable address. We’re very familiar with them. It’s the most common way that we’ve come to associate with Internet properties is through its domain name, and

it's probably what you typed into the web browser to get to this particular webpage.

But there's also another identifier in the URL which is at the very beginning, HTTPS. What HTTPS does is signal to the web browser the kind of communication you want the web browser to make to retrieve that particular resource on the Internet. In this case this is HTTPS which is secure web transport. This particular identifier is called a URI scheme, and there are multiple different kinds of URI schemes that could be used. Typically we use HTTPS these days, but there are others available. Next slide, please.

When you go to a webpage like this the domain name itself is not sufficient to get the information that you need. Ultimately that information that comprises that webpage you're looking at is sitting on a server somewhere in the Internet. The way we get to that server is that each server has a unique identifier known as an IP address. And ultimately you're device, whether it's your laptop, your mobile phone, what have you, in order to retrieve the content of that webpage it needs to find the IP address of the server that actually has the content that we're looking for.

So the domain name in and of itself is not sufficient. We need to know this unique number. Each public facing server on the Internet has one of these numbers. Some of them are IPv4 addresses which are all numeric. More recently there's IPv6 which is a combination of numbers and letters. Next slide, please.

There are literally billions of devices on the Internet, and it's impossible for any one device to know exactly where all the devices are on the Internet at any given time. So in order to reason with these individual devices, they're aggregated into these big groups. Each big group is either, for example, a particular ISP, a particular company's network, maybe it's a data center. And by exchanging the location of these big aggregated groups this is what's used in Internet routing. It's how one particular network operator works out the most appropriate path to get to a different network operator. We call these aggregated groups autonomous systems and each is allocated an individual number called an AS number. Next slide, please.

When you connect to a server, servers don't ordinarily do just one thing. They can serve webpages, they can receive email, they can be the source of file sharing. There are all sorts of different services that can operate on a particular server. The typical way to discriminate what kind of communication you're making to an individual server is through service names and port numbers. So in the case of a web transmission you might be using Port 80, but if you were sending an email to that server you would use a different port number, Port 25. So each service generally speaking is correlated to a port number and a service name that identifies exactly what kind of communication you're seeking to do to that server. Next slide, please.

You get this information back from the server for your particular web page you're looking at. How does your web browser know how

to decode the information? Some of it is text. Some of it is images. Maybe there are movies. All sorts of things can comprise an individual webpage.

Well, the primary way that a web browser knows how to interpret that information is that each component is tagged with an identifier called a media type. The media type is essentially the way that we tag the kind of encoding that that data has. So perhaps the logo is a vector image. It might be tagged with image/svg which is a common image format. There might be some JPEG files. HTML is the way that webpages are typically encoded. But each of these is assigned a media type, and the media type is the primary way in which web browsers can determine what to do with the information they just received. Next slide, please.

There are other things that need to be communicated between your web browser and the server, and these are communicated in what are called header fields. One such header field is negotiation of the language. You might be aware that based on your local preferences some web servers might give you the content in a different language. The way that's negotiated between your browser which knows your language preferences and the web server is through signaling your preferences and sending back a series of language tags that indicate priority of which language and which one the server is capable of sending you. Next slide, please.

All right, so this was really just a whirlwind trip through some of the identifiers that are used in just that one single transaction. When

we requested this webpage we supplied the domain name. We used a URI scheme. IP addresses were used to connect to the server that had that content we were looking. An AS number was used to identify which network this server resides in for efficient routing of that traffic in order to connect to the web server as opposed to another kind of server on that same host. We used a service name and a port number.

The media types that were exchanged indicated what kind of information we were receiving back. The header field indicated extra additional information around the transmission for that webpage. The language tag signaled what languages were desired and which ones were available and which ones were sent. And this is not even an exhaustive list of the kinds of identifiers that are used in a single transaction. Next slide, please.

So this leads up to, what does all this have in common? It's that for all these identifiers to work in a consistent, interoperable way for them to have a common meaning around the world there needs to be some kind of central repository that indicates which ones have been assigned for which purpose. Why when we allocate a domain name it's assigned to a particular entity. When we assign an IP address, the same. When we assign a media type for a particular kind of file format. Having a common global registry to ensure that they're consistently applied and consistently used is very helpful.

And essentially, that's at the heart of the IANA mission. IANA, the Internet Assigned Numbers Authority, our job is to maintain

registries of these kinds of identifier assignments to make sure that anyone around the world that's implementing Internet technologies can reliably use these allocations in a consistent manner. Next slide, please.

So that is at the heart of the IANA mandate. Now IANA is not a company. It's not a standalone entity. It's a concept. And it's a concept that predates ICANN, but the primary reason ICANN was established was to be a corporate home for IANA. But the IANA function certainly predate ICANN's existence. They originate back to the very early days of the implementation of the Internet as a research and experimental project.

There are people in the room I can see that know this history better than I do so I won't comment too much on it, but Jon Postel was instrumental and indeed the originator of what we know of today as IANA. And Jon was essentially the primary recordkeeper of some of those early experiments that led to the Internet that we know of today. Over time his role matured. He had a team, and it got formalized under the name IANA in the 1980s.

But the IANA mission is simply that, to be a recordkeeper for all these essential allocations that are made at the behest of different other organizations that create the Internet standards. The multistakeholder community that you see at the ICANN conference this week is part of it as well. Next slide, please.

Now I just touched on a few of the identifiers that we administer, but there are something of the magnitude of 3,500 types of

identifiers each of which has a registry that's administered by IANA. Unfortunately, the fonts have kind of corrupted on these slides, but this gives you a little bit of a taste of some of the identifiers—some of which you've heard of, some of which you probably haven't—that are administered as part of the IANA functions. Next slide, please. There we go.

The bread and butter of the IANA functions is supporting a large set of those 3,500 registries I just mentioned which are predominantly of interest to software implementers. To be clear, most of the registries I just mentioned earlier in the presentation are not really user visible. As an end user of the Internet, you're not going to see headers, you're not going to see language tags. These are all detailed software implementation elements that if you're writing software that works on the Internet, deploying interoperable software you would need to know these. But as an end user, you don't really need to.

And as a software implementer you're implementing Internet standards that are devised predominantly at the IETF, Internet Engineering Task Force. It is at the IETF that these Internet standards are developed and where IANA plays a significant role in doing its work. A predominant way in which Internet standards are developed is through the creation of documents called RFCs, and in each RFC is a section dedicated to what IANA's responsibility is for that particular standard.

This section is called the IANA considerations, and we spend a lot of our time as staff within IANA working with implementers of standards to correctly capture how IANA is to manage the individual assignments that that particular technology needs. We have a helpdesk at IETF meetings, and our skilled team sits down with these implementers and often goes into great detail on how to do these assignments and how to operate them. Next slide, please.

I think it's worth particularly highlighting two types of identifier assignments that have unique property to them: domain names and IP addresses. In both cases unlike almost all the other registries that IANA maintains if you want a domain name, you generally don't come to IANA for a domain name. if you want an IP address, you don't come to IANA. These allocation systems are so big and so vast over time has been implemented a process of which elements of these identifier systems are hierarchically delegated to other entities.

In the case of the domain name system IANA is responsible for administering the root zone which is the highest level of the domain name structure. But then there are top-level domain registry operators and levels below that. So in this case IANA is just responsible for the very highest level of the hierarchy.

The same is true of IP addresses. IANA is broadly responsible for all IP addresses, but we don't make assignments to end users or even to network operators. Instead the vast majority of IP address assignments that are made we assign to one of five regional

registries who are then responsible for creating policy and implementing assignments within their regions.

So this makes these two particular kinds of allocations quite different from the other kinds of work that we do. Next slide, please.

I should note that some of our registries, well, many of our registries could be thought of perhaps pejoratively as a spreadsheet. But ultimately it's a database of official records of what has been assigned for what purpose and who it has been allocated to and the basis on which those allocations were made, citations to the relevant Internet standards, and so forth. But fundamentally that's about it. It's an official recordkeeping exercise.

However some of the registries we administer are very operationally complex and operationally intensive as well. Probably no more so than the DNS root zone. The DNS root zone is a very fundamental part of operation of the Internet. It's operationally intensive. And one aspect of many that IANA is involved with for the root zone is administering the cryptographic key that secures the apex of the DNS, so-called trust anchor.

To do this we have a series of events that we hold called key signing ceremonies where we bring in security experts from around the world to observe and participate in these events. We livestream these online. They receive a considerable amount of media attention when they happen. But it's a very involved event. It

involves a lot of planning. We have dedicated staff who really their primary and only role is to administer these ceremonies. And it's just illustrative of some of the registries that we maintain have a significant operational dimension to them. Next slide, please.

Accountability is a very important foundational aspect to IANA. We do all this work in terms of administering registries, maintaining these records, but the community needs to have the confidence that it's being done in an appropriate way. That we're following the policies that govern how these registries operate. That we're providing a performance service. We have turnaround times that the community expects when they request service of us that we respond in an appropriate amount of time.

So in support of this and other attributes that we want to demonstrate, we have all sorts of accountability that governs how the IANA functions are operated. There are special committees appointed by different community groups that oversee aspects of what we do. We have comprehensive monthly reporting with SLAs governing most aspects of our operational services. We have an independent third-party audit of our systems and processes that we produce. We have third-party surveys that are conducted of our customers to assess are we meeting customer need. Based on their sentiments what areas we should improve upon and so forth.

In the aggregate there is a lot of oversight and accountability associated with IANA. Without going through the laundry list, we

have probably the biggest section of our website is just all about performance reporting on how we do our job. Next slide, please.

When we talk about the IANA function we typically group them into these three categories, and they really reflect not the way we do the work internally. They reflect the primary forms of accountability that this work has. The community has self-organized into these three groups, and so this is how we kind of…the lens we look at the IANA functions through. It's not that each segment represents one-third of the work or anything like that. But it's the way the community is structured to oversee the functions.

That is protocol parameters, number resources, and domain names. For each of these segments of the IANA functions there's an entirely different oversight mechanism. There's an entirely different set of contracts that govern how the work is done. And the relationships are very different for each sector as well. Next slide, please.

You might have heard of the words "public technical identifiers" or PTI. PTI is the formal company that runs the IANA. I am the president of PTI. My team is PTI staff. PTI was established in 2016 as kind of a spinoff from ICANN. It is related to ICANN. It's technically called an affiliate, but PTI is a dedicated organization whose sole purpose is to perform the IANA functions. Next slide, please.

As I mentioned, we have a team of staff, roughly 20 people. We're headquartered in Los Angeles, California, and our staff in the

aggregate operate the IANA functions, build our software and tools, do those oversight functions that I mentioned and forth. Next slide, please.

PTI as it's our own entity has its own board of directors. It's a five-member board. Three of the board are staff, myself and two ICANN appointed staff members, plus two appointed members of the community. They're appointed by the ICANN Nominating Committee. Next slide, please.

Now where does ICANN fit into all this? Well, ICANN ultimately is responsible for the IANA functions. ICANN delegates the operational responsibility to PTI, but ICANN still has a fundamental responsibility of overseeing that PTI does its job and it contracts PTI to perform all the functions that I mentioned here today.

But we also rely on ICANN for other things. PTI doesn't have its own legal department, it doesn't have its own finance department and so forth. So we do rely on the resources that ICANN provides to us so that the PTI staff are solely dedicated to day-to-day operations activity for the IANA functions.

ICANN also operates some of the accountability mechanisms. There's the Customer Standing Committee that's meeting later this week here in Dublin. There's also IANA Naming Function reviews as another demonstration of an accountability mechanism that ICANN operates. Next slide, please.

So that is my piece of the presentation. I know it's a very quick relatively high-level overview of the IANA functions. We do want to make time at the end for questions and answers, so please start thinking about what you'd like to ask. But in the meantime, I'm going to hand it to my colleague Marilia. Marilia heads up planning within the IANA team, so she's perfectly situated to talk about some of our strategic priorities moving forward. Some of the things we're thinking about, some of the things we're working on. So without further ado, Marilia.

MARILIA HIRANO: Thanks, Kim. Hello, everyone. My name is Marilia Hirano, as Kim introduced. We talked a little bit about the past and the present, and now we're going to what we're heading towards. You can go to the next slide, please.

I'll start by sharing some of the key trends that were identified when the ICANN org community board started planning for the next five years and some of the trends that came out of these exercises. Then we narrowed it down to those that would and could potentially impact IANA and how we deliver our services.

So a couple of examples, and AI of course, I don't know if there's a word that—I mean two words, right? Artificial intelligence. But more in the past two days than AI, blockchain, so emerging technologies is the general trend that we identified as having to monitor and adapt.

And then we have geopolitics, global tensions, regulatory changes. Security of the DNS. And then internally the areas we identified after conducting our SWOT analysis are that we needed to increase product release agility as well as continue to maintain the trust that we have with our stakeholders and raise awareness of the importance, not only what IANA is but what is the importance of IANA to the Internet ecosystem. You can go to the next slide. And, yes, I did use AI myself to create this slide. Yeah, that was intentional. Next.

Okay, so with that we developed what we call our IANA 2030 strategic plan. This is for the fiscal year that started in July and it will go through 2030. We have a refreshed vision. Of course, our remit doesn't change even though we are looking into the future and we have our focus areas and our new objectives set out. What we do fundamentally doesn't change. Our scope stays the same. So our vision is very similar to the previous five years.

And then we are focused on three main areas based on the trends that I just talked about. It's innovation. This is where we want to advance our agility and technological adaptability and being more proactive in assessing those emerging technologies on how they can come to impact our mission.

Then we have operational excellence. As I mentioned, our remit, our scope of work which is delivering the IANA functions to our stakeholders and our customers, we need to keep looking at how we do things and we need to always strive to achieve excellence in

our service delivery. So that is always a focus for us, to achieve and maintain operational excellence.

And then the third area is community engagement which is on that maintaining the trust that we are the proper home for Internet unique identifiers coordination. So on community engagement we have our focus on fostering the relationships with community leaders which we have built and maintained over the years. And also, leverage those relationships to target and have a broader outreach into groups that are not necessarily aware of the IANA functions and building on that explanation of importance to the ecosystem. Next slide. There you go.

In addition to our strategic priorities, of course, our main focus is, as I said, to deliver our core operations. So although it's not called out in the strategic plan, it is prioritized through our annual operating plan and budget. This is a big part of the work that we do day-to-day. All of the process transactional requests that Kim mentioned, conducting the key ceremonies, monitoring and reporting on performance, all of that day-to-day work is called out and we budget for it. And of course, we take very strong priority on this side.

So for Fiscal Year '27 (FY27) this area doesn't change year-on-year. These are our core deliverables. So for '27 these are the planned priorities. And then if you go to the next slide, we go into the strategic focus areas.

What are our innovation priorities? As I said, we are focusing on adapting to and monitoring specifically the new technologies as they evolve. So strengthening the partnership with ICANN's technical engagement teams. The IANA team sits under the office of the CTO at ICANN John Crain. His team of amazing technical experts and us, we are working very closely together. When they are conducting their research and publishing their studies we work very closely with them on all areas that could impact IANA.

Then we have, of course, the next round of gTLD readiness. In order for IANA to be ready when it comes time to delegate the new domains, our systems need to be adapted for them. And the first step is to support temporary delegations which is a requirement for the names collision phase of the program. So this is our focus for both this year and the following year, to get the systems ready for this phase.

And last but not least, updating the security of the DNS. When Kim mentioned that we conduct the key ceremonies, we have that responsibility under our scope. We are preparing for the next. It's the second key rollover which is scheduled to happen in October 2026. So we continue the preparations for that work.

And also, we're working with our partners and community experts on an algorithm rollover preparedness. So there was study published last year that had recommendations on how to proceed with the algorithm rollover. And now we're getting ready for that rollover which shouldn't happen until the following key rollover

which is scheduled, if we're following the three-year cycle, it would be on 2029. But we need to be ready for that, so the work already started.

And my slides away I'm seeing. At least we have the sound from the room next door to keep from silence. As they put the slides back together, let me just go on with the priorities. Thank you, Kim, here.

For those of you who work with us on domain name management, we are continuously upgrading the root zone management system. This is also one of the systems that, of course, we have to adapt for the next round. But we also have other focus areas on features that we need to release in order to make sure the system is fit for purpose.

With the root zone management system which we call it RZMS we are going to focus on advancing best practices for authentication. We are also planning on reviewing the suite of technical checks that are performed during the change request. So technical checks and authentication features will be our focus for FY27.

We also have our very modern IANA website. If you want to go there now and visit our website, IANA.org, you'll see that it needs some updates. We try to bring it to this era, let's put it that way. So we are focusing this year on design improvements, but in FY27 we're going to expand on this and really try to improve the user experience. And when I say this, I'm not only saying the user that will go and try to find just general content about what IANA is but also on the registry side which is the bulk of what our website is meant to deliver. So

we're working to improve that type of experience, and then also unifying the various web properties into a more cohesive platform.

Oh, it's back.

And then the last system here is the registry workflow system. This is a system that we're working with the IETF registries to improve the workflow. From the time somebody submits a request to make a change or to add a new registry to the time that that registry or that update gets published, this system is meant to streamline that workflow.

And for FY27 we already have that, that exists for some of the registries but we're expanding each year on the registries that are covered. For this year our focus is to have these registries in different formats. There is a beta site now—and this link will be at the end of our presentation, all the links that I'm talking about—that you can look and give feedback on the JSON format in addition to the other formats that we currently have the registry data available.

And then for the following years we are improving how we interact with the registries and also enhancing usability especially for common use cases. For example, registry citations, we want to provide more targeted guidance and then have the registration procedures within the registry so it improves usability. Next slide, please. Thank you.

Operational excellence priorities. This is similar to our core operations. Continuous improvement is our model. We're very focused on that, have always been. So operational excellence is something that we consider as part of our core operations.

So having third-party auditors, continuing to mature the adoption of our new quality management framework. The Baldrige Excellence Framework that we are kicking off this year.

And then advancing staff training and development within the team as well, having knowledge transfer abilities. We are a very small team and we want to make sure that we have a comprehensive knowledge base within our staff.

And then lastly, strengthen governance practices with more transparent reporting. We do report a lot, but looking at how we report things and how can we make it better always.

And then the next one is on community engagement. Yes, there we go. On community engagement, we really will focus on expanding outreach and education to stakeholder groups in underserved regions. So if you have ideas, if you have—I've talked to a few Fellows and other community members about how we can help build that awareness within your group. We're always welcoming those suggestions.

We also want to engage with stakeholders, well of course, keeping our engagement that we currently have through timely responses. Having the reporting accessible, as I had mentioned. And then

active participation in these meetings and other stakeholder events.

And then one area that we, and Kim and I were just talking about this on the way here, is educational materials. Having materials that people can come to and look for when they want to know more about IANA and what's the best platform for this. So that's a priority for us in this year and into the next year.

And continuing to monitor the effectiveness of everything we do through our customer feedback mechanisms which I'm going to touch a little bit more on and ask for your help with it. You can go to the next slide, please.

So before we get to that, I just wanted to do key takeaways here on what we talked about today. We talked about why IANA is needed and how it was established. We talked about how IANA does its work today and our priorities for evolving our services in the future so that we continue to meet your needs in the community and maintain that trust. Trust is very big, the word that I always repeat. And then next slide.

Okay, so how can you get involved with us in addition to coming to us an giving us suggestions, as I mentioned? That's why we come to these meetings. There are two public comment processes that are starting in the next few months. First is the FY27 PTI and IANA Operating Plan and Budget. And also, I'll plug in here the ICANN public comment period is the same, the ICANN Operating Plan and Budget. So please participate in that. All of these priorities that I

mentioned today are going to be listed there. If you think something is missing, if you think we should be focusing on other things, that's the opportunity you have to really review how we're doing our work, how much that work costs, and make your voices heard.

And then in February for those who are interested in cryptography, we are going to publish the Root Zone KSK Algorithm Rollover document that will explain how we're implementing the recommendations from the study that was published last year. So my team in L.A., the crypto team, they asked for participation for those who are experts in the area but maybe didn't participate in the work to look at the document and provide feedback. So I'm giving the message that they asked me to.

The next one is the DNS trust anchor availability. Operators should be monitoring their systems that they have adopted. The new key is available. I put the link there. Usually, this happens automatically but it doesn't hurt to remind people to check.

For community leadership groups, I'm talking SOs and ACs, the ccNSO Council, GNSO Council, ASO, IETF leadership. You are going to receive an invite to participate in our annual engagement survey in the next couple weeks. I will say for those of you who are in the room we don't have 17 statements anymore. It's only three. So it will take literally five minutes to complete. If you get the invite from our third-party survey vendor, please help us identify how we can service you better.

For those of you in the room today, we really want to hear how today's presentation went. And also, there's an option there for you to give us feedback and suggestions for future topics that you want IANA to speak, if there was anything that you want us to go more in-depth on, or if you want us to talk about something else completely. I can't promise we will because sometimes it's things that are completely out of our scope, but please the QR code is there. You can fill it out. It's just one question: How did we do in today's presentation?

And of course, we are leaving time for questions here in the room and in the Zoom room. Thank you very much for your attention. We'll take questions now.

TANIA HOPKINS: We do have one question in the chat. It's from [inaudible]. It says: "What was in submission in the IANA hierarchy, IANA's organization, and IANA's oversight process which led to a crisis in Africa? And what changes are made in IANA to prevent possible future crises of this nature? And then he continues with, "The question does not seek details of the issue in Africa but about the IANA coordination design which led to" and I quote, "please read that as which caused harm, time delays in IANA to notice and to act upon the crisis in Africa."

KIM DAVIES: Thanks for the question. I think the way the question is phrased presupposes certain assumptions about what IANA does and doesn't do. IANA is essentially an operational function to maintain those registries of what assignments have been made for what purpose. But we operate within an ecosystem different bodies that each have a different role.

And I think when it comes to I think the presupposition about Africa there have been some operational challenges with the regional Internet registry in Africa that assigns IP addresses and the like. IANA doesn't have much of a role that is stated in the question. Our role is fairly limited to identifying if a regional Internet registry needs additional IP address allocations based on formulas and based on need and then making those assignments accordingly.

But when I talked about hierarchically allocated registries in the presentation really what's happened is the community at large has decided on a model where responsibility for certain key identifier systems, IP addresses, domain names really shouldn't all sit within IANA. It should be devolved down at a more direct level.

In the case of IP addresses, that's at the regional level. So decision-making, oversight, accountability all operate within the individual regions for number resource allocations. It's not a fundamental job of IANA to act upon crises in particular areas and so forth.

I will note there are some parallels here with ccTLDs. Every country has its own country code top-level domain. Right now we're in Ireland which has .ie. The way the policies are structured is such

that governance issues on how .ie is operated belong within Ireland. It's not IANA's primary responsibility to oversee and analyze the conduct of the manager of .ie. That is a local responsibility that happens within the country.

With all that said, while I am essentially saying IANA has a very limited role in these kinds of situations, the broader ICANN ecosystem absolutely has a role. And who sets the policy that governs these kinds of situations? There's the Address Supporting Organization within ICANN which sets global policies for number resource allocations. And I can say that the ASO is very activated on this issue and there are discussions that have been happening over the last two years to look at the governing global policies and to work out what revisions or adaptations might be useful moving forward.

So to sum up, IANA's role is quite limited, but there is work happening in the broader ICANN community to evolve the global policies that apply here.

TANIA HOPKINS: Thank you. We have another question from [Kirin]: "What's the most common misunderstanding about IANA and its role in the Internet's operation?"

KIM DAVIES: That's a good question. I think we perhaps touched a bit upon it with the last question, but I would suggest that the fact that we

have authority in our name means that most people connote a level of responsibility for Internet generally on us that we don't have. Certainly, if you look at our ticketing system and the kinds of queries we get every day, I think a lot of people perhaps do a web search for their particular grievance and find us and go, "Well, there's an Internet authority. Why don't I go get them to solve my problem?" So we spend a lot of our time trying to politely tell people what we don't do in those situations.

But I think what we were trying to share in this presentation today is that I think we have a very important role but it is a limited role. And our name perhaps suggests that we have a much more pervasive role than we perhaps do. And so I would say in terms of most common misconceptions it's that we are responsible for a lot more than we actually are. We have a very narrow remit that we think is very important and it's very important we do well, but it's not in substitution for all the good work that's done by many other organizations. And it's all the organizations as a whole that come together that makes the Internet what it is.

MARILIA HIRANO: Can I just add one thing to that that I always like to stress? At IANA we don't set policy and we don't interpret policy. We can serve as subject matter experts in policy discussions if it pertains to something that IANA needs to implement. However we are completely out on the policy development. So that's a common

one. And then we cannot reset Instagram passwords. We have gotten that request before. Thank you.

KIM DAVIES: We welcome questions in the room as well. Please?

TANIA HOPKINS: Please use your mic.

RIYADH ZEHRAH: Thanks a lot. My name is Riyadh Zehrah, ICANN84 Fellow. My question is where is IANA from the underserved countries? How can they afford the assistance for serving their issues or their problems? Thank you.

KIM DAVIES: I think I would start by responding to that that we try to be an effective service provider to all countries. And in terms of how we do our operational day-to-day work, we do a lot of outreach. For example, at meetings like this we spend a lot of our time, my team that's here, in direct one-to-one meetings with our customers trying to solve their problems. So in terms of specific issues with an IANA assignment, we try to have meetings with our customers and support that kind of problem solving when we travel around the world and so forth.

With that said, to the more general question of serving underserved communities and helping them solve their problems, a little bit I do

come back to IANA's remit is not to solve every problem but solve problems in our problem space. But we do work within the broader ICANN organization, and ICANN has a very mature group of engagement specialists around the world both doing general stakeholder engagement but also technical engagement that we work very closely with. Certainly the resources of the broader ICANN organization help augment what the IANA team can do.

At the end of the day the IANA team is only around 20 people, and we only have so many people that can do so many things. But with the support of ICANN, indeed our partner organizations as well that we work with, it allows us to extend our reach and serve the communities better. And we're always looking for opportunities in specific regions to identify what are the key problems in this region that are IANA related? How can we use upcoming events or engagements or travel that other staff might be doing? How can we leverage that to support what IANA is trying to achieve?

But also, by filling out the survey on the QR code, tell us what kinds of engagement would be useful and that will help inform our approach moving forward. I don't know if you have anything to add on that.

MARILIA HIRANO: No, just to emphasize we do have our Global Stakeholder Engagement team, we have our government engagement team and they're regional. And if in your region you think that there's opportunity for us to come and either explain our process better on

whatever issue might be happening in that space, we work very closely with them and they will quickly put us in the loop and we can have the dialogue if we need training on a process, explanations. We are available and we do work closely with them on that. So don't hesitate to reach out and see if this is something we can help. Or if it's outside of our remit, we will say it and then hopefully be able to point you in the right direction on where to go if we can't help.

TANIA HOPKINS: From [Kirin] again. First one, "Do you see any realistic way the IANA functions could be implemented or supported using blockchain technology?"

KIM DAVIES: Thanks for the question. I think it's a technology that we continue to monitor. I don't think we've found any direct applicability to the work that we do today, but it's an emerging field and there could potentially be areas of opportunity there in the future. So I certainly wouldn't rule it out but nothing today that comes to mind.

I will note that the fundamental Internet technologies that IANA is tasked with implementing typically originate from the IETF. So probably a predicate to IANA evolving a significant new technology like that would be some level of standardization happening within the IETF first.

TANIA HOPKINS: Second question from [Kirin]: "Do you think the current IANA model could survive a major geopolitical split in the DNS root? For example, if a large country launched an alternative root and demanded ICANN recognition."

KIM DAVIES: Lots of tricky questions today. I mean, at a certain level all we can do is do the job to the best of our ability. If IANA is not delivering what the global community needs, new proposals will emerge and they'll survive or die on their merits. And I think observing trends and working out…I think in those kinds of scenarios we'd look at where is the IANA model failing that they're trying to remedy? And if it's something within your control, then that would inform our strategy. Where can we improve?

But some might be rooted in just a desire that there not be a global interoperable Internet. And at a certain extent if your mission is to not have an interoperable Internet, so basically hive off part of the Internet that works differently to the rest, there's only so much IANA can do to rectify that problem. I think we're best situated just to focus on doing what we do as best as we can. That's my quick take on that question.

MARILIA HIRANO: Let me go to the gentleman in the blue suit and then I think we have one over here too.

UNIDENTIFIED MALE: Yeah, thank you very much. [inaudible] from AFRINIC. Coming from the domain name part I have a question on the numbers part. You said the you manage IP address, and I would like to know a little bit more about what is behind this management compared to the fact that you have RIRs in every region. I visualize the root zone. I see that .fr is in it. I see that you may have the power to erase it. It would be a very bad idea. But I mean, I know what you are managing in terms of domain name. I don't see what you are managing in terms of IP.

KIM DAVIES: So conceptually it's very similar to the root zone in that we manage the hierarchy, the very top level which is essentially the entire IP address space. Now most of IP address space is allocated for what's called Unicast usage. And essentially for all Unicast assignments we essentially give very large blocks to regional Internet registries who then in turn divide those blocks up for assignment to individual networks and so forth.

But there are blocks that are not Unicast. There are Multicast assignments being an obvious one. There's special purpose allocations. Much like the DNS itself. While most top-level domains are there for assignment for just general purpose registration perhaps within an individual country or for a particular field of endeavor. But we have .arpa for example which is a special purpose top-level domain that is only there for certain technical functions. There's no general purpose registration available in .arpa.

If we come back to IP addresses, another example of IANA assignments is private use IP addresses. I think many of you will be familiar with 192.168…. That's a block that IANA holds specifically for the purposes of allowing individual network operators to reuse these numbers in their local networks. and there are lots of allocations like that. I don't want to do a laundry list here today.

So essentially IANA manages the entire space. Much of it is assigned to regional Internet registries, but much of it is held for these other specialized purposes. And there are obviously many blocks that are not allocated at all. They're there for future use. All of which is governed by a few key things. One being the technical standards. The technical standards inform certain classifications of IP addresses having certain purposes.

And then those global address assignment policies that tell us here are the grounds on which an RIR can be appointed. These are the grounds on which an RIR might be eligible for new address assignments. Like there are very specific formulas that they have to demonstrate over the last 12 months their exhaustion rate is past a certain threshold. So we measure and monitor these thresholds and then once it crosses this threshold, that's when we allocate a new block. So that's how it works in practice.

MARILIA HIRANO: We are out of time. I'm just going to let you ask your question and then we will close the session.

WOLFGANG KLEINWÄCHTER: Okay, Wolfgang Kleinwachter, former ICANN Board member. Do you expect that some of the IANA functions could be overtaken by AI applications in the future?

KIM DAVIES: It's hard to crystal ball too far into the future on that. I think much like blockchain in terms of short-term applicability we haven't seen any applications that caused us to rethink the way we do our job. I think one of the challenges with the state of generative models and AI in particular right now is their nondeterminism which is sort of antithetical to our job as being an official recordkeeper. If you lack that determinism, then how can you trust what you're receiving is actually correct? So I think that's a real fundamental challenge on the way we think about AI and how it might apply to us today. Long-term who knows? I mean, I think it's just an area to continue to monitor, as with all the evolving technologies, and see how it might apply to us.

MARILIA HIRANO: Thank you very much, everyone, for coming to the session today. Kim, myself, Tania in the back, and Selina Harrington were here. If you have any further questions, come to us and we're here. We can hang out here for a bit to answer them, the ones that didn't get answered right now. Thank you so much for those who participated remotely too. Thank you.

[END OF TRANSCRIPTION]