
ICANN85 Mumbai | CF – Joint Meeting: GAC and the IETF
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JULIA CHARVOLEN

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And with that, I will hand the floor over to Ian Sheldon, GAC vice-chair. Thank you and over to you.

IAN SHELDON

Thank you, Julia. My name is Ian Sheldon, I'm the Australian GAC representative and one of the current GAC vice-chairs. Welcome back. I hope you had a fantastic evening. This morning we've got a session with the IETF lined up for you. I think often GAC members

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spend a lot of time trying to better understand the full Internet landscape. There are many players in this wonderful space and coming to ICANN you certainly get an opportunity to meet a lot of them.

The session today will hopefully help you better understand other parts of that system, what those parts like the IETF and Internet Society do, where the overlap with your role here in ICANN is and where you might want to go to get advice for some of those other broader issues you might be grappling with back with your home digital portfolios. So on that note, I might hand to Dhruv. Thank you.

DHRUV DHODY

Thank you, Ian, thank you, Nico, thanks to the GAC to give us some agenda time and to talk about our favorite topic the IETF, the Internet Engineering Task Force. This is the agenda for today. We have a bunch of speakers. We'll be talking to you so maybe we'll do a quick round of introduction. I'll start. Namaste, I'm Dhruv, I'm based in Bangalore here in India and I'm on the Internet Architecture Board. David why don't you start next.

DAVID LAWRENCE

And I'm David Lawrence, the IETF liaison to the ICANN Board and I just stumbled there for a moment because this is super geeky, but a lot of people know me as Tail, so if you hear somebody referring to Tail, they're referring to me.

WARREN KUMARI

Hi all, I'm Warren Kumari, I'm also on the Internet Architecture Board.

SALLY WENTWORTH

I'm Sally Wentworth, I'm the President and CEO of the Internet Society.

DHRUV DHODY

So, I'll take the first part of the agenda which is talking about IETF and introducing it to you for those this is something new topic or maybe a refresher if you have heard of IETF in the past. And my focus would be also to explain how IETF fits in the bigger Internet ecosystem.

So, here you must have heard that the Internet technical ecosystem is often described as names, numbers and protocols. ICANN of course does the names, numbers are at all the RIRs, the Regional Internet Registries and then we have the IETF which is where we develop protocols which make the Internet work.

But key part is all these communities which do things independently but they coordinate at all steps because we need to make sure that we are able to maintain and develop this critical Internet infrastructure that continue to maintain and evolve our Internet protocols and make sure that the Internet operations remain resilient, stable and global interoperable.

To know about any organization, I think the easiest way is to go to their mission statement and this is ours. It's pretty straightforward. Our main aim is, make sure that the Internet works better, but we do this with a very focused mandate which is to produce relevant technical documents and those technical documents that influence, the keyword here again is influence, the way people design, use and manage the Internet. I'll of course go over a little bit detail, but keep this mission in mind and that will explain how IETF works the way it works.

Before we jump into the details about how an IETF does things, it's important to why we even are talking about this topic and this is where the open Internet standards come in. Basically, these standards are the protocols, the technical rules that allow any device, any service, any applications that decide to follow the same standard is able to interconnect in the global network of network that we call Internet.

Devices made by different vendors, services originating in different countries, across border in a global Internet and that's how it's done, interoperability. That's the key why we focus on the open Internet standards.

One thing that we focus on is not just our output which is open, that our standards are completely available openly for free, but also the process in which we develop our standards is open, transparent and bottom-up.

That gives us the trust in our output that the systems and the protocols that we have developed have been scrutinized enough, enough eyes are there even though we are on the leadership, we can't really change directions, the ideas always come bottom up from the community and this openness in both our outputs as well as our process is the reason why the Internet is the Internet today, why it has led to just permissionless innovation and people using these building blocks, these Internet standards to develop brand new applications all the time.

Why does this matter? Well open Internet standards especially to this community in this room, this is basically the foundation for all your digital economies within your own countries, the secure and resilient Internet infrastructure, interoperability across the world, that's not just focused within our boundaries but across the boundaries and delivery of digital public goods that you reach out to your citizens, all is based on this global Internet architecture.

These standards when they are open, they also give you flexibility, there is no vendor lock-in, you are given user choices, you can move things to a different vendor, do use services from a different person, it gives your citizens, the users choices as well. And innovation from any part of the world is immediately available globally and that's the beauty of open global Internet standards.

To this community basically, that means when you are discussing topics like DNS security, DNS stability, avoiding Internet fragmentation and the idea of ICANN itself of an open single global

Internet, all of this is tightly coupled to the open Internet standards as well. These are the technical foundations over which we all achieve our shared policy goals for the global Internet and that's why I wanted to stress on the slide a little bit more. Thank you.

Next, a little bit ethos of the IETF itself. Everyone participate as an individual at IETF, this is little different from some of the other organizations you will see. Of course, we declare our affiliation, we tell who we work for, but that's not, we are not representing them in the IETF.

We don't have memberships, that means it's completely open, you join a mailing list and you are an IETF-er. There are no membership dues, there is no signing, there is no organizational members, none of that. All of us are just individuals and we participate at the IETF.

Our outputs are building blocks. So one thing especially from us, the Internet Architecture Board people come to us and say where is the grand architecture and the blueprint of the Internet? That's actually something that we don't believe in. We believe in building blocks, that we develop RFCs and building blocks and we let other people innovate with them.

The protocols that were developed when Internet looked very different from the past and Internet evolved from desktops to mobiles to now moving to satellite, but the same protocols continue to work because we developed building blocks and not

grand architectures which were fixed and which did not allow innovation to happen.

We mentioned about these building blocks, as I said they are completely available for free. No login required, no membership, all our output is completely open. And not just the output, every version that leads to it, all our meeting materials, drafts, recordings, everything we make available for free.

The final output is judged on technical merit. We have a concept of rough consensus, there is no voting and its chairs, we get input from everyone, look at all the technical reasoning that is provided and based on the technical reasoning we decide whether yes, there is enough consensus, rough consensus in the group to move forward.

And finally, our success is based on voluntary deployment and this is the most important part there. Even though we come up with the standard, we can't force anyone to go and implement it, we can't force anyone to deploy it, it is the market, it is everyone in our Internet ecosystem that believes yes, this is the best technical solution out there for a global interoperable Internet and that's why we will implement it, that's why we will deploy it and that's why users get to choose to use it.

Now let's look at the IETF as a community, because yes, we talked about ethos, this but what makes any organizations are the people behind it. Our IETF community of course, it's a technical community so you get a lot of participation from the industry but

that's not all, we get pretty good participation from academia, from civil society, from governments.

At a plenary meeting, we had around 77 countries represented, so that's pretty good, of course we can do better, we do realize that there is lots of countries that are missing but we are open and we welcome participation from everyone as an individual and all community members irrespective of which stakeholder they are get the same standing in our process.

But at the same time, we do realize that we need to tailor some engagement. We have Sally, who will talk about policymakers' program, especially focusing on how to make it easy for policymakers and regulators to come and participate. Similarly, we do things like hackathon for Open-Source community, sisters for women participants, so we have tailored program like new participants program et cetera, but once they participate in the standard process, everybody has the same standing irrespective of which stakeholder or where they come from.

Now, if we look at how we actually do things, and this is something that we have been very proud of, that all our IETF meetings are either remote only or completely hybrid, there is nothing that happens only in person, and we have a pretty good number of people who always participate remote.

So there are around, any meeting, around 35 to 45 person folks remotely, and it's not just passive participation, we have folks who chair meetings remotely, who do this. This time we are

experimenting with remote rooms that people can gather in a particular part of the world and join together as a room.

So we are always evolving in how to make remote participation as easy, as first class citizen as we can. Some of the groups actually just meet remotely because of the way they do work. They decide for themselves that this is the cadence by which we will meet at this particular time zone, how we will rotate the time zone, and they just do work remotely.

Another important part is even though people who cannot make it to the meetings, every decision is verified on the mailing list. So, everyone is given a chance, a voice, to put their feedback to the group at all times. And the data tracker is basically our site where we maintain everything, all our drafts, all our RFCs, every meeting material. This is basically where the lifeline of the IETF behind it.

So these are the building blocks that I was talking about. Our building blocks are basically the RFCs. These are our standards. As I said, they are free, they are publicly available, they are developed in a fair, open process. We have a pretty mature IPR policy as well, which has been stable over time, and it's basically a very well-respected brand.

People might not have heard of IETF, but they have most likely definitely heard of RFCs out there. And some of the RFCs that you see, of course, in this community, DNS being the primary one, but not just DNS, HTTP, TLS, security, IPv6, BGP, RPKI, everything that

you see on the internet, these are the building blocks that have been developed by the IETF.

So this is how we organize our work within the IETF into what we call as areas. The things that you see in the grey, those are outside our remit, so we don't do the link layer protocols, that's where we work with other SDOs who do that, IEEE, for instance, 3GPP does mobile, ITU, for instance, for layer 0, as well as on the top, we work with web standards team like W3C, but within the IETF, everything from moving the IP packets over link, that's where the internet area comes in, to finding the paths within the network and across the network, things like IGP and BGP, path computation, all that thing happens in the routing.

Web and internet transport, that's where TCP, IP, QUIC, HTTP, these protocols exist and over which applications, applications like WebRTC, things that we are using on the Zoom call for video conferencing, calendars, how our calendars simply work from different applications, because there are clear standards for them.

Looking at our organizational structure, everything that I talked is on the left, the IETF, we have these areas, these areas have area directors, which together make what we call our leadership body IESG, Internet Engineering Steering Group, and we have two other organization, IAB, Warren and I are from the IAB, we provide long-term technical direction for protocol development and internet development at the IETF.

We do some pre-standardization work, so even when topics are not yet ready for standardization, but we want people to come together and discuss, that happens at IAB workshops, this is a pretty good place for participation from folks in this room as well.

We do liaison coordination, talking to all the bodies as I was saying, other standards body that we saw in the previous diagram, as well as even things like ICANN, and outreach, the activity that we are doing right now.

Apart from IAB, we have the IRTF, which does long-term research, while IETF focus on engineering, this is the problem that we need to solve in the short term, versus things that we are not yet sure about. There are still broad research questions that needs to be answered before we can jump to engineering, and that happens at the IRTF.

So again, this is a venue for a lot of academics, a lot of researchers to come and participate and get real world experience from the IETF folks present in the IRTF venue as well. And there are around 16 research groups, so it's much smaller, whereas around 125 Working Groups at the IETF.

And then we have the admin at IETF LLC, and IPMC, which is our Intellectual Property Management Corporation, earlier called IETF Trust, they hold and manage the rights to all the IETF contribution, which we simply provide for anyone who wants to use our IETF material.

Before going forward and listening to IETF a little bit, this is a way for us to see how the two organizations, especially maybe ICANN and IETF, how we view the multi-stakeholder model in a little different way.

In IETF, while we do everything in open, there is no membership, but of course here in GAC everybody knows, there's a formal government representation and there is a defined membership. In representation, in IETF, you are representing yourself, you are speaking in an individual capacity, but GAC members of course speak for the governments.

The organizational governance is a little different, in IETF things develop bottom up and when we are making decisions, we have a thing called IETF last call, which is a single mailing list where every IETF-er comes in and discussion happens completely in open, where every part of the community puts their point at one place, whereas in ICANN we do things differently, we have different stakeholder groups, they make decisions, then the decision goes to Board for, it's just a different way of doing things.

The way we form consensus, the rough consensus versus otherwise, and accountability and transparency. IETF believes in just putting everything in open and all discussions happen completely in open, everything is monitored, everything is recorded.

In ICANN we have a mix, we have some places where we have completely observers, public participation, in some places where

we have closed. It's all because we serve different roles in the internet ecosystem and this model is tailored for the role that we play, while IETF focus on technical aspects and ICANN focusing on the setting the right set of policies around them, but both being multi-stakeholder in their own ways.

Just to cover a few things more about the IAB, as I said, we are the long-term technical direction, we provide long-term technical direction for internet development and our aim is that internet should continue to thrive, while the Working Groups and the ISG is looking at each Working Group and people are focusing on building blocks, the IAB job is to continue to see how these building blocks continue to fit together, whether they will have the right flexibility, whether the internet architectures, the internet core principles continue to be followed.

So that's how we provide both architectural guidance and some technical foresight to the IETF. Again, we don't have an official place in the standard process, outside of that we are a separate group which can provide advice and guidance and publish our own RFCs and give to the community. We also take care of the process, that is to make sure that the process is being followed at the IETF correctly, that's how we come into the appeal handling, if somebody has any disagreement with the way the things have done in the IETF, they come to the IAB and ask us to look into things afresh.

The liaison coordination, which I kind of covered and the part I wanted to focus on, you would have seen some of us at the Internet Governance spaces as well, so we are the body in the IETF which looks after participating in IGF and other UN and WSIS and other activities as well.

Just wanted to cover some of the statements, these are all links, if you are interested you can go read it, but this is something to introduce that IAB does this.

We publish statements on issues that affect the internet architecture and operations, sometimes these are based on public consultation, like we all provide an input for WSIS+20 for instance, and sometimes even when regulations come from a particular government and there are public comments, especially when it impacts the internet architecture, we are the body that comes and provides some guidance there as well.

Some statements are completely reactive, sometimes we take proactive action, so if you are of interest, all of this is available on our IAB statements page as well, just as an information.

This is my final slide. Since Open Source and running code is a very important part of the IETF process as well, so this is our motto, we believe in rough consensus and running code. In our process, we are not always looking for the solution that looks best on paper, but solution that's actually running, which people can say that yes, this already works, this already interrupts, they are already available, that has higher value in our process, then technically on paper the

solution looks the best, so running code is very important part of the process as well.

So IETF, before the meeting, we organize these public open hackathon where anybody can propose a project, community comes together and work on their topics of interest, whether it is the draft that they have proposed or already published standard that they want to make sure it's currently interrupts okay, people have their open source communities come with their problems and describe how things need to change in the existing standards, completely open.

It's not sort of a competition, it is just a way for us to get the open source and implementers work much closely with the folks who are working on the standards itself. So initially when this started, I was a bit apprehensive, like Saturday, Sunday, two days before a big IETF meeting, how would it even work?

This is one of the most popular things that we see in the IETF, Saturday, Sunday before the IETF the room is jam-packed and people are just coming together and working openly without any direction from the top or a structure in any way, community just finding each other and that's the beauty of the way in which IETF works.

Before we go, is there any clarifying question that I can answer? Otherwise, we have some time at the end for the discussion as well. Are there any questions?

IAN SHELDON

Any questions for Dhruv? Okay. So, maybe one question, talk about consensus, I've heard about this thing called humming at IETF. Does that really happen?

DHRUV DHODY

It used to, but with the remote participation, I think on our mics humming might not be the best way to do things, but it started with getting a sense of the room and of course raising the hands feels more like, oh you can count quickly, it's more closer to working, but everybody just hums is a much more, like you know, the right way to get the sense of the room and that's how it started.

Our documents still talk about humming, we still like to keep it, but it has just changed in the remote environment a little bit where we do, like our tools have this thing built into it where we ask people for feedback, but the key thing is humming was never a way for us to make decisions.

This was always a way to get a sense of the room and again, based on the sense you take the next step. It was never about making the final decision.

DAVID LAWRENCE

So I believe I'm up next, but I did want to comment on one aspect of Dhruv's slides that I wish I had realized in our preparation is that the word interoperability never appears and that is one of the key areas of scope, in fact the defining area of scope for the IETF is that

we are concerned with protocols across the internet that have to interact between differing implementations and so, we have no effect on protocols inside a particular organization, for example say Facebook. We are not really responsible for how their programs work within themselves only to the extent that their programs interface to the outside world.

WARREN KUMARI

Yeah, I think part of the thing is it's such an integral part of what we do that it didn't occur to us to list it separately. It's our whole purpose for existing.

DAVID LAWRENCE

So, hi, again, Dave Lawrence, the IETF liaison to the ICANN Board. I don't know who's controlling the slides, but there we go. Thank you, Dhruv.

It should be noted that ICANN and the IETF were really coupled from the start because each of the organizations is developing work that the other organization depended on. In fact, many people who were involved in the early IETF were involved with the creation of ICANN.

So, the original 1998 bylaws for ICANN included something called the Protocol Supporting Organization, which included the IETF along several other member bodies to advise on the technical aspects of the internet.

I don't remember the full set, but I know it included W3C and ITU. So, the PSO existed for the first several years, during which also a memorandum of understanding was created that established an IANA liaison to the IETF. That was in March of 2000. But then just a couple of years later, we actually eliminated the PSO and created non-voting liaison seats to the ICANN Board.

There were originally six such seats. We are down to currently three, which include the IETF liaison, the SSAC liaison, and the RSSAC liaison. And I will mention them again separately. But that doesn't mean that the ICANN has stopped their technical interaction with the other bodies. It just uses different channels to accomplish them now.

So, as the IETF liaison, I am providing a channel to discuss issues that have both technical and policy implementations. There are things that you might want to do with the technology that policy people would have comment on and vice versa. And so, the IETF liaison exists to try to bridge that space.

Several technical community members are regularly participating in both organizations. Notably, IETFers are involved in the Security Stability Advisory Committee and the Root Server System Advisory Committee. They come to tech days and the ICANN hosts a DNSSEC workshops and also a technical IDS, I think they call it, the ICANN DNS symposium that happens once every year or two in order to bring together implementers, protocol developers, operators to share their experiences and look toward the future.

Also though, ICANN technical staff does participate very actively in the IETF, particularly several employees in the office of the CTO, but also, for example, IANA. They contribute documents to the IETF, participate in Working Groups, and make other types of research contributions to ongoing work at the IETF.

Here is a list of just some of those staff-authored RFCs. We limited it to staff-authored RFCs, and this is still only a selection because if you actually were to list out all of the RFCs that had members of the ICANN community involved, there would be multiple, multiple slides of this.

ICANN community members have been contributing to the IETF for two and a half decades now, and so the list of RFCs is quite long. This particular list represents, I believe, five or six different authors. So, if you are on more than one RFC, there is in particular one ICANN staff member in the office of the CTO who is prolific in contributing to the IETF, and for that we are very grateful. So, he represents about half of these RFCs. But however, it is more broadly scoped than that in that there are several contributors.

So, the IETF does have several different liaisons and appointments. Me as the liaison to the Board, and then there are several committees and Working Groups that are also formed. For example, the RSSAC, which is the Root Zone Evolution Committee. William Toroop is a DNS expert from the Netherlands who participates.

The ICANN Nominating Committee, of course, takes members from all across the ICANN community, including the IETF. The Technical Liaison Group includes Warren, to my right here, and Petr Spacek, another DNS expert from Czechia. And then the recently concluded Root Server System Governance Working Group includes, had the IETF appointees on that Working Group were Jeff Houston, Jim Reed, and currently the IETF liaison to the Root Server Advisory Committee is Daniel Miegel from Montreal.

The IANA function, of course, is one of the most significant ways that we interact. You see I have a bullet point that says many, many IETF standards need IANA updates. As a tech geek, I phrased it that way because what I really wanted to say was nearly all. But I don't know what the actual number is. I know our standard document template includes a section that says IANA considerations. What are we going to ask the IANA? How are we going to ask them to update tables?

I still believe it is significantly most of our documents, but I haven't done the math to tell you quite how many. However, that tight interaction between PTI, which provides the IANA function on behalf of ICANN, and the IETF is quite tight. There is ongoing review of documents and making sure they understand what the technical people meant and so on back and forth until we can produce the final document.

And the main reason we need IANA, as we do with a single root DNS, is we're trying to avoid collisions and confusion. As was earlier

talked about during the RSSAC meeting, humans interact with names, protocols interact with numbers. When computers are talking to each other, I might know what I meant by asking for a particular feature, but the computer just saw the number 15, and it has to clearly understand what that number 15 was supposed to mean. And so, by having centralized registries through IANA and PTI, we avoid this confusion by establishing who was using a particular number for what purpose.

Over the long history of ICANN, there have been many individuals that contributed to both communities, strengthening coordination and their mutual understanding. You will no doubt be familiar with many of the names on this list. Several of the people, at least two, are in the room currently. Hi, Suzanne, in the back. And Jim Galvin as the current SSAC liaison, Paul Hoffman as ICANN staff member, and so on. We are grateful for the interaction the two communities have helped to develop a more interoperable internet.

So, some of the key areas for this interaction has been Internationalized Domain Names, for example. I was actually part of the original design team that developed these about 25 years ago for how we could represent international scripts on the ASCII internet. And then that has since become ICANN's Universal Acceptance about how we can get more people around the world involved in ways that are comfortable with them.

The special purpose domain names, these are reserved through ICANN and IANA processes to make sure that there are many

companies that just say, oh, our internal namespace is going to be named .internal. So, what would happen if ICANN were to decide during the next round of gTLDs to assign .internal? So, the IETF and ICANN work together to identify which labels should get some special form of handling. These are not necessarily all reserved, for example, .onion. They are reserved, but they are reserved for different purposes, I should clarify.

So, .arpa, for example, is important for internet infrastructure, and that is handled quite differently from, for example, what would happen with .onion as a label.

DNS security and operations, of course, are extremely important. All protocol development on the DNS takes place in the IETF, which includes the cryptographic signing of domain names, which was essentially a bolt-on feature to the original domain name system of 40 years ago, and so the IETF continues to help evolve that space originally. For example, DNS security extensions were a bit difficult to manage, and so over time different documents have come out, making the whole process easier.

And of course, registry registrar communications also rely on protocols that are developed by the IETF, EPP being the long-standing one, RDAP, of course, for WHOIS information, and currently there is a new Working Group working on another provisioning protocol called RPP that ties to bring it into the current state of the art. And then as mentioned repeatedly, IANA plays a vital role.

So the IETF is not a policymaking body by definition, but we also recognize that technologies have policy implications, and so that's why we really rely on this interaction with the policy bodies, being able to provide our feedback about what's possible, what's not possible, but also understand what the desires are from the policy side.

So, we welcome those discussions, both informally and formally. I'm about to rope in both Ian and Nico, because they have separately indicated to me an interest in participating more in interacting with the IETF.

So while you can use me very much so as the IETF liaison as a resource, if they're at arm's length and you have something IETF you want to discuss with them, I know they'll be happy to bring it to me. So, feel free to talk to any of us. And then in addition, the IAB is also very interested in being able to talk with GAC members as is their desire. So, they can be reached through the IAB.org email address there.

WARREN KUMARI

Thank you. So, thanks. As Dhruv and David both sort of gave overviews of the org, I'll cover a little bit of the technical work that we're doing. This is going to be very high level, and it's primarily so that you have links that you can follow after the talk.

So, our next meeting is actually going to be next week in Shenzhen. But as Dhruv noted, remote participation works really, really well.

I realize it's likely not feasible for most people in the room to come to Shenzhen now, but please participate remotely. Fee waivers are easily available. If you'd like to participate, you can definitely do so.

As I just mentioned, this is going to be very high level. But this is some of our newly formed Working Groups. Each of these links goes to the charter for the Working Group, which describes what the Working Group is going to work on, and a link to its documents. If you'd like more information about any of them, please go follow these links. We have about 125 Working Groups at the moment. These are just the newest ones.

So the way that new work starts at the IETF is a group of people get together and decide there's something interesting to work on. The name comes from birds of a feather flock together, and that sort of describes how people come together. They say, this seems like work that's good in the IETF. They discuss if it's within the charter, and then if potentially it is, we'll form a Working Group.

There are two buffs for the upcoming IETF meeting. The first one is on AI and how to sort of organize the work in the IETF to make sure that we're all working in the same direction when discussing AI agents.

The next is a sort of spinoff from a IAB workshop, which we held at the end of 2024, and we heard from operators that they would like a way to configure a service on a network. Instead of just

configuring every router along a path, they'd like to say, I would like my network to do this, and sort of a higher-level abstraction.

Next. As this is ICANN, we'll talk a little about some of the DNS work that's happening. Currently in the DNS, a parent domain has very limited ability to signal information about the child. It can basically say, the child name servers are over there, and their IP addresses are this. This has been around for, what, 40-something years, largely unchanged, and we'd like to make DNS a bit more modern, and so the DELEG Working Group is aiming at trying to improve the delegation model, so instead of just saying name servers are there, you can say more things about the name servers, like this name server supports DNS over TLS.

When you connect, you should expect it to do encryption. Or this set of domains is an alias for this other domain. You should go look in the other place.

Another thing we keep hearing is when people register a domain, they often want to outsource the mail or the web hosting somewhere, and having users manually configure this is really difficult. You have to tell the user, please copy and paste this into your registrar, click those buttons, et cetera. Decon is a way to try and automate that to make it easier for registrants to be able to actually use the DNS.

Next. Obviously, AI is a very hot topic everywhere, and the IETF is doing some work in the AI space, as is everyone. AI preferences aims to allow website operators the ability to signal if their content

can be used for AI training and use, so instead of just saying you can crawl this portion of my website and use it in search, and a way to express preferences about what the content can be used for.

Closely related is Web Bot Auth. With the proliferation of AI stuff, there are increasingly more web crawlers, and Web Bot Auth is a way so that site operators can have some trust in the fact that a web crawler is who it says it is. We're also working on improving the efficiency of data centers, especially for AI, by doing things like making the energy metrics better exposed, et cetera.

Next. As Drew mentioned, the IAB runs workshops. We had two very recent ones. One of these was on IP address reallocation, so instead of just being able to say this IP address is generally in this area, so a close data center is X, better ways to signal where a user is in a privacy-preserving manner.

Another recent workshop was a joint workshop with W3C on age-based restrictions. Clearly, there's a lot more regulation these days around having site operators be able to ensure that users are at least a certain age to access certain content, and we're trying to work on a privacy-preserving manner and making sure that there are not too many different mechanisms.

We're also working on things that are much further out and much more new work. This includes things like sustainability, and also how you might be able to use the internet protocols in the space environment. Clearly, things like doing networking to Mars has very different implications than purely on the earth in terms of

latency. We also do some policy-focused things like Human Rights protocol considerations, and also more cryptographic stuff like making sure that our protocols are quantum safe.

Next. And we'll hand it over to Sally.

SALLY WENTWORTH

Thanks Warren. Again, I'm Sally Wentworth, I'm the President and CEO of the Internet Society. The Internet Society and the IETF have had a long-standing and very strong relationship dating back to the earliest days of the Internet Society in 1992, where the IETF was a significant activity of the Internet Society.

The relationship has changed over the years, of course, as both organizations have changed, but the Internet Engineering Task Force and the work that they do remains a hugely important part of the Internet Society and our overall vision that the internet is for everyone.

Having said that, the IETF, as Dhruv and others have noted, has now more independent operating mechanisms and governance structures, reflecting the growth of the IETF and the strength of its operations and importance in the internet.

The Internet Society remains a strong financial contributor to the IETF, and there are aspects of governance that we both share. For example, we appoint the IETF's nominating committee chair, something I need to do very soon, and the IETF plays an important

part of nominating four members of the Internet Society's Board of Trustees.

The Internet Architecture Board is a technical advisory Board to the Internet Society, and we work closely together on things related to public policy, outreach, and engagement, where the Internet Society aims to support the work of the IETF through engagement with government officials and in intergovernmental policy operations.

So, I think overall, my message would be this is a very strong collaboration between the IETF, the Internet Society, the IAB, and together we work very hard to be a strong part of the internet technical community, supporting the growth of the internet around the world.

Next slide. One way that may be of specific interest to people in this room is a program that we run alongside the IETF and in collaboration with the IETF and the IAB, which is the Policymaker Program. This was something that we started, gosh, many, many years ago, maybe it was 2014, something like that, when it became increasingly clear that government officials wanted to understand more about how the IETF worked, what the implications were of its work.

We heard Dave say earlier that, you know, IETF does not engage in public policy, but some of the work that it does has policy implications. And the IETF runs differently than many of the standards bodies that government officials are used to

participating in. And so, what we decided to do was create a program, it's quite small, usually around 15 to 20 people per fellowship program, to the IETF to provide a structured engagement opportunity for these government officials with the IETF community.

As part of this, there are opportunities to attend Working Group sessions, to meet the IETF and IAB leadership, and also to receive training on how different aspects of the Internet works. And what's really cool about it is that we're able to draw in speakers from the technical community in the IETF, the very people that are writing the RFCs or who have developed some of the underlying technical specifications that we all rely on.

So, we'll do in-depth sessions on routing, we'll do in-depth sessions on security or the domain name system, and other aspects of the Internet that you may have been curious about and you now have an opportunity to engage with the technical experts that actually develop many of those specifications.

What we also try to do is help you understand and government officials understand the technical implications of some of the policy decisions that you may be contemplating. This is done in a Chatham House environment, so it's really intended to be a space where people can ask whatever question you've always been wondering, and we usually try to find a technical expert that can help address that question in some way.

So, this is something the Internet Society offers in collaboration with the IETF. It's quite small, but it has, I think, proven to be useful, again, to try to demystify the IETF for government officials. It also gives many, often what we will hear from governments is, I don't see enough of my country's technical representatives here. How do I make sure that our technical experts are participating in the IETF?

And we think that's a really important start of a conversation about how to get your national research networks or your labs or your industry experts starting to participate in the IETF.

So, I'm happy to take any questions or comments about that. Oh, I see I have one. There you go.

NICOLAS CABALLERO

Thank you, Sally. Hi, Nico Caballero, GAC Chair. By the way, I got here two minutes too late, sorry, I shouldn't. Anyways, the question is, will the policymaker program be available for the session? I understand you will have a session in July in Vienna, is that correct? Because Shenzhen is way too close. I mean, that will be absolutely impossible for any interested GAC member. But if we have the chance to send our technical teams to Vienna, for example, which, again, is it June or July? July. So, there's still time for us to prepare, like, I don't know, two or three members of our technical teams and send them to Vienna?

SALLY WENTWORTH

Yes. So, there's a couple different ways to participate. I'll speak about the policymaker program is the participants in that specifically are typically not the technical experts. Sometimes they are, but typically they're government officials that need to understand how some of this works.

We're developing the list now of invitees to that program. Again, we keep it rather small, otherwise it sort of loses some of its impact. If you are considering ensuring that your technical experts are engaged in the IETF for Vienna, there are also a wide range of programs that the IETF itself offers to ensure that those new participants can effectively participate. So, maybe I'll let one of you speak to that. Yeah.

WARREN KUMARI

So, in addition to the policymaker stuff, which is more policy focused, we also have things like the IETF guides program, which Wes is deeply involved in, and that's for more technical people just to sort of help get them situated. We also have a very good newcomer session, which is just sort of more, and Dhruv has --

DHRUV DHODY

Let's move to the -- any more questions?

DAVID LAWRENCE

Well, I hadn't further comment on that since Nico had previously asked me for an invitation to the Vienna IETF, and I want to

reemphasize something Dhruv said in his original presentation. There is no membership, there is no formal invitation necessary.

The IETF runs on people who engage in it because they are motivated to engage in it. So, a country that wants to send its technical team to the IETF is more than welcome to do so.

The additional part I wanted to point out was the IETF is very much focused on the ongoing work of its Working Groups, and so if you haven't been following that Working Group action, it's easy to walk into a meeting, open up your laptop, and pay no attention because you have no idea what's going on. However, that said, there is still a lot of value in attending IETF if you haven't been involved.

Besides the new participants program, Dhruv had previously mentioned the Internet Research Task Force, and we also have the IEPG, which is another protocol research group, and finally we have our dispatch Working Groups. All three of those areas generally do contain bottled presentations, you could say.

You can walk into a room with no knowledge of what's going to happen and get a complete presentation that does not assume that you are just working into existing work. They will helpfully tell you about a lot of what's going on in the Internet space, and in particular, dispatch Working Groups are a way for people to bring new work to the IETF, so you get to see what's on the horizon and maybe be in on the ground floor of technology that will be developed.

IAN SHELTON So, Ajay, we do have a queue forming here, so if it's okay, I might go to my GAC colleagues' questions first. We have two hands up and a question in the chat, and then perhaps we can take other questions from the floor. But we do only have seven minutes left, and the interest is fantastic, but please, Santosh.

T. SANTHOSH Thank you. This is Santosh for recording, but I believe Jorge is before me. Is Jorge there?

IAN SHELTON Sure. Jorge had his hand up, and then he put it down.

T. SANTHOSH I will go after Jorge.

IAN SHELTON Okay. Jorge, the floor is yours.

JORGE CANCIO Thank you so much, Santosh. That's very kind. So briefly from my side, I just want to invite colleagues to make use of this IETF Policymaker Program. I, myself, I haven't had the chance, but I have people in my team who took part, and it's extremely

interesting and useful. So, really for policymakers, it's a very good opportunity, so I really recommend it.

And the second thing was really the question that Marco is asking, how you embed Human Rights and international law considerations into your standard-setting work. I know you have had, in the past, some work on the matter, but maybe you can explain. Thank you.

DHRUV DHODY

Should we take all the questions, or maybe --

IAN SHELDON

Sure. Let's catch all the questions and perhaps we can address them.

T. SANTHOSH

Thank you, Ian, and yeah, it was a good presentation from all the IETFs here. So, my question to the panel is, anyone can take this. So, we have various RFCs, like RFC 1035, RFC 4725, and RFC 6125. This is basically a validation of the domain names.

So how this RFCs, which has been there from, say, 1994, till, say, some are there from 2011, 2015, which RFCs I had mentioned, how this could be implemented in the policies of ICANN? Where the thought process gone into this RFCs when it was designed? And my second question, regarding the participation in IETF, the fees barrier is too high. So I believe that the next Vienna, if the GAC

colleagues are trying, are we requested to make a payment of, say, \$1000? Thank you.

DHRUV DHODY

So, maybe I'll answer the first question first, which is about the Human Rights. So, right now at the IETF, we have, as I was mentioning, a research group. This is still a research question. We don't have a consensus within the IETF on what's the right way to handle this within our current process. But at the same time, when we take up new work, when a new work is proposed, we, and there were recent examples on things like DALI, which is a Working Group dealing with location trackers.

And that location trackers had inputs coming in from civil society and Human Rights considerations, especially from people, organization working on disputes, home disputes, and partner violence, things like that. So, those considerations were taken before we formed the Working Group, that whether the solution that we come up with, what are the right guard rails in the charter, and whether it actually solves the problem in its own.

So, in our process, even though there are still bigger research questions on how we incorporate Human Rights discussion when we are doing technical work, but at the same time, when the problem directly impacts, I think we, since we are, we take inputs from everyone, those inputs get incorporated in our charter formation as well.

Warren, why don't you do the DNS one? Yeah.

WARREN KUMARI

One second. So yeah, I can do the DNS and ICANN one. So, in the next ICANN guidebook, there are already like more than 114 references to IETF RFCs. So, I think that they are quite well incorporated into the ICANN process. I mean, for example, a lot of the ICANN stuff is about the DNS, which are RFCs. So, I think it's well-built in.

For the fee question, no, you definitely don't need to pay \$1,000 and show up in Vienna. For this next IETF meeting, we have currently around 500, almost 600 people who are participating remotely only. And if you want to participate remotely, there are fee waivers available. So, all you need is an internet connection and you can participate just like a first-class citizen or anyone else.

DHRUV DHODY

And add to that, based on the IETF ethos, we saw that we are not a membership organization. We are not taking any money from any organization from the member. And we are one of the most frugal internet standards organizations you will find. And there is a joke, like we pick the wrong, every time we go to other bodies and we do outreach, oh, we picked the wrong body and where is the money?

And in fact, we want support. And there are so many supports that each country doing independently, various activities, various RIRs supporting us, ISOC supporting us. So, we do need support from

outside bodies so that your constituents, the people that you are serving, you are able to send them to the IETF.

But asking IETF itself, based on the constraints that we are in, it's difficult based on how our whole structure is, that is we don't have the membership, nor we have ways in which we can generate revenues, all our outputs are free, everything, we just need to incorporate some cost of running the meetings and running our operations, which is actually very, very tight.

IAN SHELDON

Well, thank you, Dhruv. I think we're right on time. I do want to finish by saying the policymaker program is an excellent program. I have sent not a small portion of my team and other parts of my department along to the program.

The photo from before had a folk, one of my colleagues sitting there, who's responsible for platforms regulation and management, listening to Olaf explain routing protocols. I think as policymakers, we grapple with these issues and it's often hard to find right sources of advice for both the work we do here in ICANN as well as the work we do back in capitals.

So please, after this session, come have a chat with our colleagues here, ask them a little bit more about the IETF, ISOC and the IAB and grow that relationship, because we have found it incredibly valuable in the Australian government. That's all we had time for.

Before we close and thank our ISOC and IETF and IAB colleagues, would my chair like to say anything? No? Thank you.

Well, thank you so much for your time today and looking forward to having more conversations in the future. Please be back in the room at 10:30 for an emerging topics discussion. Thank you.

[END OF TRANSCRIPTION]