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PRAGUE – ASO AC Workshop on IP Addressing Activities  
Wednesday, June 27, 2012 – 13:00 to 15:00  
ICANN - Prague, Czech Republic

Louis Lee:

...that would suffice. And Hartmut, are those brochures passed out to those that – well are there brochures to pass out to those that like it? Okay, let's started, sorry for the delay, we as the ASO and the NRO has had – is still having a meeting actually with the GAC updating them on the current situation RPKI deployment. So several of us have come over to have this session start and if the tables can wait until a little later, that would be excellent.

All right, my name is Louie Lee. I'm the Chair of the ASO Address Council, and I'll just go jump right in. We're going to go over what the ASO is, give you an update on the outreach and education activities touch on the ASO Review Report, the Global Policy update, the Regional Policy update and the Internet Number Resource Status Report. There will be time for discussion afterwards and I would ask for questions throughout the presentation at the end of each section. That way we can stay relevant on topic.

Now are there any remote participants that would like me to go into about the ASO in depth? How about in the room? Everyone knows who I am, who we are? All right then, we'll just breeze right through this then.

The ASO is a function run by the NRO; two bodies the AC and the EC. The AC's primary purpose is for number resource policy making, well

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not policy making, policy facilitating. We also have a function of putting two ICANN Board members and serving on the various ICANN teams. The Exec of the Council are made up of the Cos of the five RIRs.

What is the NRO? The NRO is the organization that does the work of the ASO; it does also facilitate other items which require coordination, for instance protecting the whole of the unallocated number resource pool. And as described here are the five regions on the slides. These regions you might see have similar overlap with the ALAC regions or the ccNSO regions, but they are not identical.

ASO funding to ICANN. The ASO does provide some amount of monies annually to ICANN; it comes out about \$823,000 annually with the percentage – the breakdown as shown.

The Address Council is composed of 15 members, three from each region. We are an independent body separate from the RIRs in that we are elected from the residents of the regions. As shown here are the 15 members, we have I believe about seven members represented in the ICANN week here, several of which you see – two of them up here and also a couple down in the audience, and we'll get to know them in a little bit. Any questions about the ASO? I blew through it pretty quickly, but if anybody wants to ask, now is a good time. Excellent.

Okay, outreach efforts. This community, the IP community and the RIRs jointly do regional policy meeting and subregion meetings. If you can't come to one of the physical meetings, you can participate remotely, or if you would like for the meeting to come to you, there are some subregional meetings regularly put on such as the one in Russia and in the Middle East.

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IETF participation is fairly heavy and it does vary a little bit from time to time depending on the topic being discussed, but there is considerable work happened on the technical side for developing protocols, and for instance the RPKI, that effort has a joint cooperation with the IETF.

The NOGs, NANOG being the North American version, there is a MENOG for the Middle East, there's NOGs all around the world happening at various sizes to address the operational issues and operational training that needs to occur for the smooth operation of the net, and beyond that just operation, there is also security focus and building outreach for the folks all around the world.

IGF and other internet governance forums with v6 forums, trade shows, and civil society just to make sure that we reach not just those that are interested in numbers, but interested in say IT work.

So I touched on training a little bit with the outreach there, you can do face to face training, where you can come to us. Or if you request, we can come to you. The learning opportunities are online, you can just go to our website and find on there fairly easily, I hope for you webinars and learning modules. If you cannot, please do get a hold of us, and we'll direct you appropriately and see if there is a way we can improve that.

Of course collaborations with the NOGs and training organizations, universities in several of the RIR meetings, the meeting is well integrated into the network operative group meeting week. Then in the area of public affairs, we host round tables, workshops and presentations where we would be at the ITU working with OECD groups and so on.

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Fairly new in this effort is the Seed Alliance. There is a new umbrella alliance to promote innovation and social development funded by the IDRC along with AfrNIC, ABNIC and LACNIC. The RIR partners are as shown have the projects listed as FRIDA from LACNIC especially; and AfrNIC fairly new fire I believe it's on there. Of course this Seed Alliance on March 31<sup>st</sup> of this year.

And in the area of internet governance the next meeting that we want to highlight is the Baku in November. The MAG members being Paul Wilson and Paul Rendek, they are from the APNIC region and the RIPE region.

With NRO workshops that are open to all specifically the internet governance and RPKI and the moving through IPv6 workshop. Any questions about what I've just gone over? Great. May I pause for just check for remote? Thank you Olof.

Okay, independent review of the ICANN ASO. We had slated for John Curran to provide this update, however he is still engaged with the GAC at the moment, so I can do this for you. There was a request for a proposal some time ago and Items International had completed the review at the end of last year. The review was posted in I believe the March timeframe, and we received one comment. The review consisted of 26 recommendations with an additional recommendation we saw from the comments and the NRO provided a joint NRO and ASO AC reply to all 27 recommendations. They are in the, if I may characterize, they are in a positive manner and do address the recommendations either directly or seek other ways to address the concerns that the recommendations are seeking to solve.

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And I jumped ahead on the slide. Okay, questions about the review, please. And the floor mic.

Yaovi Atohoun: Is it working? Yes. Yaovi Atohoun. I would like to know what is the next step in the review?

Louis Lee: So the next step that I've glossed over is in the slide here that I did not show. The report is being reviewed also with comments and the response, it's being reviewed by the ICANN structural review committee, insofar that there are some recommendations that point to the ICANN Board and how they might interact with the ASO. Thank you. Any other questions about the review? Great.

So Global Policy update; overview of the process is that the regional communities would typically propose a policy which we would look at and see if it could be a candidate for a global policy. The Global Policy as defined by the MOU and the NROs, sorry the RIRs more specifically is a policy that requires actions not only by the RIRs themselves but actions by other ICANN bodies such as the IANA. So the SO AC have a look at these policies and as they work through policy development process as defined in each region will come to consensus if they do. And if they do come to consensus on this will pass onto the NRO and up to the ASO AC to review and if we find that the policy proposal has gone through the process following the process well, and also has addressed all the significant concerns then we'll pass it onto the ICANN Board for comment and ratification.

The ICANN Board can also suggest policy or suggest a – not so much a solution or perhaps more like a problem statement for the ASO AC to look at and perhaps adjust a policy be made to address that situation.

So the current policies have to do with the criteria for establishing new RIRs, allocation of ASN blocks from IANA, allocations of v6 and v4 address block from the IANA to the RIRs. So pre-exhaustion and at exhaustion those have existed previous to the most latest policy that has been ratified, being GPP, IPv4, 2011. This is the global policy proposal for post exhaustion IPv4 allocation mechanisms by the IANA. So it guides how IANA would receive the address phase that may come to them in any form whether the RIRs return them or they are returned by the IP holder directly, perhaps a legacy holder and it was ratified by the ICANN Board last month.

Since then there have been already resources returned by two of the RIRs, the RIPE staff has given some amount and the ARIN also has done so. The specific address blocks are documented on their websites. Any questions about that? And we have a question from Elise from the floor.

Elise Gerich:

Actually it's not a question, Elise Gerich ICANN, IANA. And I just wanted to mention about the post IPv4 exhaustion policy that was adopted in the addresses that were returned to the IANA. And we had a meeting this week with the RIRs to talk about how to register those, and what the registration policy will be, I mean we're holding them, but to make them publically accessible so people know what state they're in, we've been talking with them and have some proposals with the RIRs that

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we're discussing of how that publication will show up on the IANA website.

Louis Lee:

Thank you, excellent. Anyone else? Great. Okay, Regional Policy update. So we have a summary here showing that there 37 proposals being worked on around the world, and the breakdown is shown here with 11 about IPv4 policies, 7 on the IPv6 policies, 10 on transfer policies, 6 on WHOIS and registration change, and other reverse DNS and ASN policies, there are 3 of those. So as you can see while there is a substantial number of policies rather technical, there are also internet governance matters to attend to such as specifically the transfer policies and the WHOIS. So if you think you cannot participate just because you're not a "techy", there is plenty to work on.

And if I may ask Naresh Ajwani from the AP region.

Naresh Ajwani:

Thank you under discussion policies we have got for IPv6 which is a proposal 101 and this took place in the last session also, and out there we wanted to make some changes which now have been done and we will be taking it up in the forthcoming APNIC meet, this will be about multi-homing requirements for IPv6 potable assignment, there is a need to remove them, and then we have for IPv6 again a proposal 99 which is to have acceleration for large NIC works because some economies wanted to have a [particular set] and a large allocation and that's what we will be discussing in the forthcoming APNIC.

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In terms of a pending implementation, there is a proposal 102 which is about guidelines for resource allocation for IPv6. We simply abandoned the 98 because there was some kind of a duplication, rather there was some conflict out in the proposal also, which was optimizing an IPv6 allocation strategies, and we want to simplify it. So that is currently in terms of the policies being undertaken at APNIC. Thank you.

Louis Lee:

For AfrNIC, they have a policy that's been recently implemented, it has to do with the abuse contact information and ways of reporting abuse contact in the WHOIS database. But beyond that, under discussion are a couple of policies; there is one specifically about IPv4 with anycast assignment in the service region. And recently expired, meaning ones that have either been abandoned or no further work, just left stale, they have a time out on two of the IPv4 policies and one WHOIS.

The IPv4 ones have to do with recommendation of allocated but unrouted v4 space and the transfer of IPv4 addresses to just anyone. And within ARIN, recently adopted are three transfer policies that have to do with say inter RIR transfers, clarifying requirements for v4 transfers and ASN transfers.

And then in discussions are more transfer policies with one v6 and a couple of other ones are v4 and WHOIS, and so you can see there's plenty of work to be done and the next ARIN meeting will be in October if you'd like to come join us. But before that, join our mailing list and have your thoughts. I'll leave that up there for a moment for you to scan through. You don't want me reading the slides to you. All right, and then in last call there are a couple of IPv4 and WHOIS related



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policies. The v4 policies have to do with limiting the use of the term dialup, basically [dovetailing] that and the special IPv4 allocations assignments reserved for new members.

Now of the WHOIS ones that are in last call are the ROA data in the WHOIS database and one is available and registering assignments, I'm sorry, I just jumped into LACNIC here, I thought I was under ARIN still here. So we do not have a LACNIC representative in the room, that's okay.

Continuing on, recently implemented. For three v4 policies have to do with the distribution of v4 space with just a modification of how that works there with a slight change on line 6 also of the policy manual under v4 exhaustion. Now under discussion still are three transfer policies. If you're interested in transfers, I just jumped into...

Louis Lee: If you like, please.

Hans Petter Holen: For some reason, we're now starting with the ones under discussion. To update the database with proper abuse contact management as required not only by law enforcements and governments but to make that information more structured, to make sure we can run the internet properly is one of the proposals. Then there are three proposals here on the RIR, on the transfers of IP addresses within the – you want me to speak even louder, okay.

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Within the region and between the region and the last one is also interesting because it actually proposes to require the RIPE entity to publish all the transfers so that would be transparent to the community. PI assignments from the last [slash 8], it was noted that the policy for the restricted policy for assigning from the last address block was only allowing assignments to ISPs and not to end user companies who wanted to be provider independent. So this proposal is to change that. So next slide please.

On recently implemented policies there is one under moving the multi-home requirement for IPv6 provider independence, there was a technical requirement in there to make sure that the RIPE NCC would actually check that were were multi-home but as that's not possible to do in a good way in the internet, that requirement has been removed.

And then the second one here is changing the minimum requirement size for IPv6 initial allocation, so you can actually get more at this space in the first round, so you can plan to grow faster to paraphrase.

And the last one is to make sure that we still have some IP addresses for v4 internet exchange points in the future, so the internet can continue to grow. Thank you.

Louis Lee:

And if I may advertise a little bit, participation is easy. Being that the policy mailing list have no membership requirements, and by membership meaning you do not have to be a member of the RIRs, you do not have to be a resident of the region that you want to discuss

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policy or even propose policies for. You may attend the RIR meetings either in person or from remote participation.

Now the upcoming meetings are listed the next few are the APNIC, RIPE and ARIN region meetings, followed by LACNIC and AfrNIC. You might note that the ARIN meeting is the week right after the ICANN meeting in Toronto, so if you're in the North America anyway for that pop in.

At this point, I'd like to make sure I introduce all the ASO AC members from the various regions, if you have any questions about the policies within each region themselves, please reach out to us, and you don't even have to find a specific person from the region, we'll make sure we get you in contact with the right folks, if you want to go more in depth. So up on the table here we have Naresh Ajwani from the APNIC region, Hans Petter Holen, Wilfried Woeber right up here, Tomohiro Fujisaki, and Fiona Asonga right over there. She is hailing from the AfrNIC. I'm sorry I did not mention your regions, Wilfried from RIPE region and Tomohiro is from the APNIC region. Do we have any other ASO AC members? Okay, they're related folks, we have Dan Alexander in the back from the ARIN Advisory Council, the Council helps oversee the policy development process and engage consensus within the ARIN region. We also have various folks from the RIR staff and if you can make sure you identify yourselves, there's Hartmut walking around, I believe he has some brochures if you like some more information and detail about how to participate.

Internet Number Resource Status report. This was prepared by the staff of the RIRs and this is – most of the information is as of March 31<sup>st</sup>, this is done quarterly. I am presenting some of the information that can be

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found elsewhere but hopefully this summary will help you work through the larger reports.

So the status of the v4 address space, IPv4 can be said to be blocks that can be broken up into chunks of /8s which is – and there are 256 /8s in the whole of the IPv4 address space. So this chart describes how those chunks are distributed amongst uses, and amongst the regions. So as you can see they are pretty much allocated and of course what's left, so are the chunks of /8s as of March 31<sup>st</sup>, there are about four /8s in the AfrNIC regions to be allocated out, in APNIC effectively there's less than one, so they are right now in austerity measures where the blocks they will be assigning out to requesters or rather small but just enough to get them through their initial hump while they are hopefully deploying their v6.

In the ARIN region there is a little less than five chunks as of March, I'm not sure, and we'll go into a slide with the current status a little later in the presentation here, just a few pages on. In LACNIC there's a little less than four /8s and in RIPE about two and a half.

IPv4 address space issued by the staffs of the different RIRs, you can just see the trend of the graph. I think that's more important than the actual detail of the each bar. So you can see that up until 2010 there's been a trend of more and more space issued in the APNIC region, with that dropping off and this was only two years ago, so we can show here where the address space is distributed more finely here; how it's issued out with APNIC having about 45% and RIPE NCC having about 33%. You might see that AfrNIC has a very small amount of space issued in this time on January 1999 through March 2012, being that the amount of

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addresses issues is directly proportional to the amount of requests that have come in. So the requests for address space in the slides would aggregate to the amount shown here. So you may see that growth in some of the other regions are not as large as RIPE and APNIC, that could be one conclusion. You might look at the date and draw other conclusions, perfectly willing to discuss.

ASN assignments, ASNs are autonomous to some numbers that describe – help networks describe and identify themselves as a single network and they use ASNs to talk to other ASNs and exchange routes, meaning this is if you want to get to this address, come to me. I am this ASN routed this way. So the graph would roughly show how many networks are out there with – and the number of networks that are growing.

And a follow up pie chart about number of assignments that have been made. You might see that ARIN has fairly matched up with the RIPE region, it describes that ARIN's assignments have – we'll show that they have roughly the same number of networks as the RIPE region.

Four-byte ASN assignments. Now the earlier scheme for AS numbers are set up as two-byte, it's a certain address size. Four bytes extend that to allow you to have two orders of magnitude larger amounts of address space, two bytes more, which is not actually twice as much more, somebody help me here eight times? Much, much more, way more than eight, right. I'm trying to do this in my head right now.

So anyway it allows you to have that many more networks in existence at the same time on the internet. Tracking this is important because there are many networks out there still using equipment that do not support the four-byte scheme. The new scheme has come with a new

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way of talking with each other that is backwards compatible to some extent.

The regions that have been using the most four-byte ASNs are in RIPE and in APNIC with LACNIC coming up really close and ARIN and AfrNIC falling behind there. It has to do with the networks those listing networks perhaps asking for more ASNs that may have legacy equipment and the provider claiming that they cannot support the four-byte AS numbers, that's one of the reasons given for not having a large adoption in the ARIN region.

More interestingly IPv6, Elise did you want to address the conclusion that I drew?

Elise Gerich:

You know I'm not going to challenge, this is Elise Garrick again; but on four-byte ASNs, I mean we keep saying they're new, but how many years have they been out there.

Louis Lee:

True.

Elise Gerich:

I mean can you quantify for the group, because they're not new. I mean they've been developed and in vendors' equipment for quite a number of years.

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Louis Lee:                               Somebody has that number by chance about when four-byte was – there are those people looking for that right now.

Elise Gerich:                             Well, if you look at the slide it says 2007.

Louis Lee:                               Oh yes, 2007.

Elise Gerich:                             So you know five years is – it's not old, old, old, it's not like Prague, but it's definitely not new.

Louis Lee:                               So Elise brings up a very good point in that there may be large perception issues about the ability to use four-byte ASNs, and the excuses out there may not hold up anymore, being that the four bytes available and I'm getting nods from Elise, thank you. So we can go on and have a discussion right after this section. Olof.

Olof Nordling:                           I just confirm the global policy for ASN which has confirmed the existence and the co-existence of two, three-byte and four-byte ASN was adopted in the fall of 2007, so well it's got a few years already.

Louis Lee:                               Four-byte ASN is no secret shall we say. All right, IPv6 address space, some think that it's new, we have stats going back to October 2006,

there has been considerable work since before then. So this set of pie charts can help you understand what amount of space we are talking about that is being allocated to the RIRs in context with how space there is in the IPv6 block. So you see a small chunk has been assigned out – well, has been designated for IANA to give out to the RIRs, and a sliver of that were given out equally to all five RIRs, equal in size, there is no judgment made about growth, no judgment made about region size. So if there's considerations on why a certain region got small amount of space, well that's because the other regions got the same amount of space, and if you look at it /12 is actually fairly large.

Now actual allocations maybe, we'll move onto the pie chart actually, right after we have a look at this, you see some growth in allocations given by the RIRs with the RIPE region handing out the most. And in all you can see that the RIPE NCC, the RIPE staff has given out roughly half of the allocations in use so far.

Now given that the allocations can be assigned to the ISPs we also look at the assignments given out to the end users. You don't have to be an ISP or an NIR or an LIR to receive addresses.

This interesting graph shows the percentage of members with both IPv4 and IPv6 in that – okay maybe less than half but a substantial portion of the members are able to make use of their IPv6 addresses that they have in their possession. An update, as of June 25<sup>th</sup> the available number of IPv4 /8 blocks is shown here with AfrNIC having a little more than 4 /8 equivalent and by equivalent I mean /8s or aggregates of addresses adding up to a /8, with APNIC having still less than a single /8



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and ARIN now having come down to 3.2 from the previous number and LACNIC at about 3.4 and RIPE just under 2 /8s.

This is the actual numbers from the graph. These statistics are available online too, you may see them on a quarterly basis, and you can draw also the raw data from INO website. Questions, comments about the statistics. Okay, Olof, I believe we have a comment from remote.

Olof Nordling:

Yes, this is Olof Nordling reading out questions from the remote participants and we do have a question from Faisal Hassan from ISOC Bangladesh and it runs like this. Deployment of IPv6 is rather slow in developing countries. There is a huge demand for training, although RIRs have training programs, but those are insufficient compared to demand. Thus RIRs have planned a partnership with universities to scale the training program. End of question.

[background conversation]

Louis Lee:

Raul, I believe you'd like to address that.

Raul Echeberria:

I'm Raul Echeberria, I'm the CEO of LACNIC and I can answer this question from LACNIC point of view. I agree with the part of the assertion that says that the capacity is important for IPv6 adoption. I slightly disagree with the fact that the training that we are providing is

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not enough, in fact in Latin America we have trained more than 5,000 people, and the analysis that we make in the region is that the capacities exist this is not a problem for – this is not the main obstacle for the adoption of IPv6. In fact probably it's the strength that we have is that we know that we have the people trained to deploy IPv6 and it depends not in the availability of the human resources, but in corporate decisions and other things.

But of course we continue doing the training and we are scaling the training. What we are doing now is trying to train trainers and make materials available on site since we provide many things through the online. So we are just trying to multiply the options of chances for training people.

Naresh Ajwani:

We are also doing the capacity building and emerging economies we are taking it seriously recently we did in Calcutta, India; and similarly you know this kind of programs are there in the majority of the emerging economies in APNIC. However, definitely there is an issue of a demand and supply and an option, I think that is something which needs to be addressed so things can really go out out at the bottom of the pyramid where the training can be imparted or not.

Louis Lee:

Might I suggest that the question of asking for training is really just a matter of reaching out and asking for it. I know AF NOG is going on around the African region as along with the AfrNIC meetings and there are efforts to follow up on that. And I think we have a comment from

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the floor. Go ahead if you would like to take a mic please it would help our remote participants to hear your question.

Victor Ndonnang: Thank you, my name is Victor Ndonnang; I'm from Cameroon, ISOC Cameroon Chapter. So as far as we have a translation here I will continue my comment in French. So can you please take your headset?

Louis Lee: Is there a French translation happening? Yes, there is. Thank you very much.

Victor Ndonnang: I was saying that my name is Victor Ndonnang; I am from the Chapter of Cameroon, thank you for your presentation and your updates on the last activity on the addressing. I would like to start with – I want to go straight to the question that was asked by a colleague from ISOC Bangladesh.

When it comes to the Cameroon Chapter of the Internet Society. We are working on a project which is called Impact IPv6 with the financial support of the Internet Society and the support of AfrNIC. And this initiative I have to acknowledge started since AfrNIC has organized for the first time a meeting in central Africa, especially in Cameroon, specifically in Cameroon.

This really boosted the deployment of the IPv6 and actually to this date there are two registrants and two ISPs and service providers, internet

service provider which are having concrete activities of deployment of the IPv6.

So I would like to say here thank you to AfrNIC for all the efforts that they are doing to support the deployment of the IPv6 when it comes to the region, the African region, and I would like to say as well that the deployment efforts cannot only be limited to training. There is a lot to do when it comes to centralization, because if I take the case of the Cameroon, after the AfrNIC, there was a Presidential decree that allowed the national agency for communication to be in charge of the distribution of the IP address at a national level, but in result we know that the agency is not a member AfrNIC, but my question is how is it going to be practically set up? Because right now they are service provider, internet service provider which are members of AfrNIC that have address blocks that at a political level that it will be just one agency which will be in charge of all the distribution of the IP addresses at a national level.

At a level of DUT or that the IT would be in charge of the address deployment of IPv6 addresses, my feeling is that if something is not done at the level of AfrNIC and some states continue in a unilateral way to give the distribution of the addresses to national entities, it will be limiting the managing of the IP addresses.

Louis Lee:

We have John Curran from the floor; I believe he'd like to address the question.

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John Curran: Yes, this is John Curran, the President and CEO of ARIN and the Chairman of the NRO which serves as the address supporting organization. With respect to your question regarding the allocation of addresses by national entities, I do not see a deal from AfrNIC here who would be the best one to address that, but it really is a question that needs to be worked in each region regarding whether or not they'll use ISP based allocation, which is most typical or whether or not national organization allocation will be put in place. Obviously some governments have beliefs regarding the merits of a national-based allocation system that does have interesting implications for internet routing and for service providers who have to operate in the region. But ultimately it's a matter that has to be discussed in those regional forums.

There is no overall policy that says allocations must be allocated from a regional registry, we do have several RIRs that have national level registries as part of their operation. But that's a significant implication that needs to be discussed and supported by the service providers in that community. So I recommend you bring that to [Aguale] for AfrNIC and that discussion be held to make sure that the service providers want that as their outcome.

Victor Ndonnang: Okay, thank you.

Louis Lee: And on follow on is Hans Petter.

Hans Petter Holen:

Hans Petter Holen. I'm going to answer this from my experience in building ISPs in the Nordics many years ago. Back then when we built the first ISPs we were always doing this nationally and we were competing with the incumbent in each country, this was in the beginning of the 90s. Today all the ISPs that are part of building or have purchased services from are no longer national ISPs. They have merged across borders. So all the big players in the five countries in the Nordics today are operating in Norway, Sweden, Finland and Denmark. And they have all merged their address plans to be cross order so the need for national addressing is no longer there. It would actually be a problem for these players today if they had to use specific addresses in specific countries. So I think that while national registration of addresses may seem a good idea, then at least my experience in the Nordics is that it's not a request for that today, it's more of a request to have sufficient resources available. Thank you.

Louis Lee:

Thank you. And while this forum is not exactly, this one here today is not exactly a policy discussion forum, and we can try to take some sentiments back over to – as input into the policy discussions, I would urge you to engage directly so that we do not misrepresent what you have to say. And then that way you can also hear the feedback directly from other participants, rather than trying to get a sense from what we might gather from those other meetings.

Other folks? Okay are there any questions for not just the last section but overall. By the way one of the recommendations from the ASO review has to do with morphing or evolving this workshop into

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something that may be more engaging or more useful for the audience, for you and also for anybody that might want to come, but don't know if they want to come. What did you like? What did you not like? You can tell me now, tell me later, fill out the surveys. So please we'd love your feedback on this.

All right if there isn't anything else, we'll close the session. Thank you very much.

[Applause]

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