

WELCOME

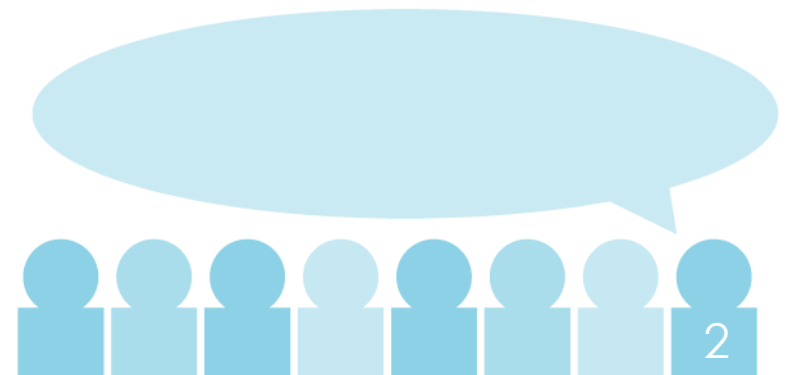
ARIN
@NANOG⁵⁸



PUBLIC POLICY
CONSULTATION

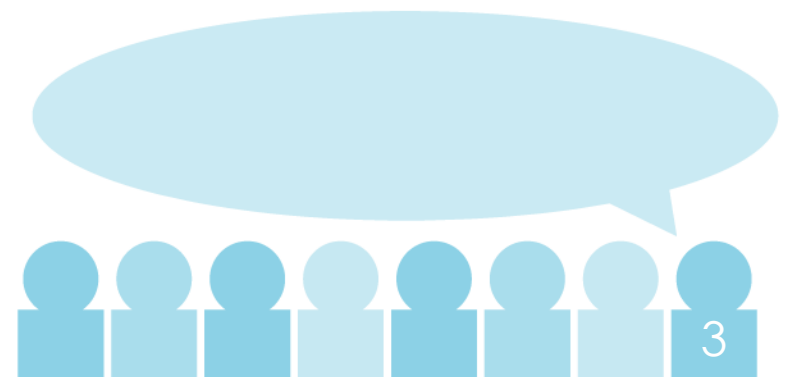
Public Policy Consultation

- *An open public discussion of Internet number resource policy held by ARIN facilitating in-person and remote participation.*
- *May be held at ARIN's Public Policy Meetings and at other forums as approved by the ARIN Board of Trustees.*



Agenda

- 1. Update on AC Activities**
- 2. Recommended Draft Policy ARIN-2013-1:
Section 8.4 Inter-RIR Transfers of ASNs**
- 3. Draft Policy ARIN-2013-2: 3GPP Network IP
Resource Policy**
- 4. Draft Policy ARIN-2013-4: RIR Principles**
- 5. Draft Policy ARIN-2013-5: LIR/ISP and End-
user Definitions**



Welcome Remote Participants!

https://www.arin.net/ppc_nanog58/

Webcast

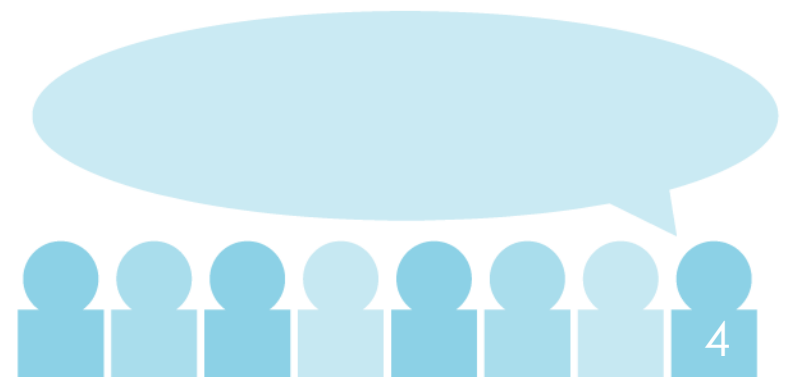
Live Transcript

**Downloadable
meeting materials**

Chat rooms

- On-record
Virtual microphone

- Hands-up
Show of hands



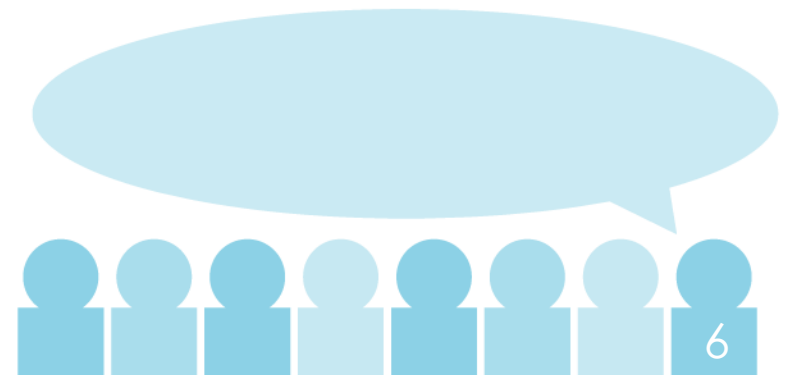
Rules & Reminders

- The Chair moderates discussions of draft policies so that all can speak and all can be heard.
- Please clearly state your name and affiliation each time you are recognized at the microphone.
- Please comply with the rules and courtesies outlined in the Discussion Guide.



At the Head Table...

- **Paul Andersen, *Vice Chair and Treasurer***
- **John Curran, *President & CEO***
- **Kevin Blumberg, AC**
- **Bill Darte, AC *[Jabber monitor]***
- **Scott Leibrand, AC**
- **John Sweeting, AC Chair**





Update on Advisory Council Activities

John Sweeting, AC Chair

Current Draft Policies & Proposals

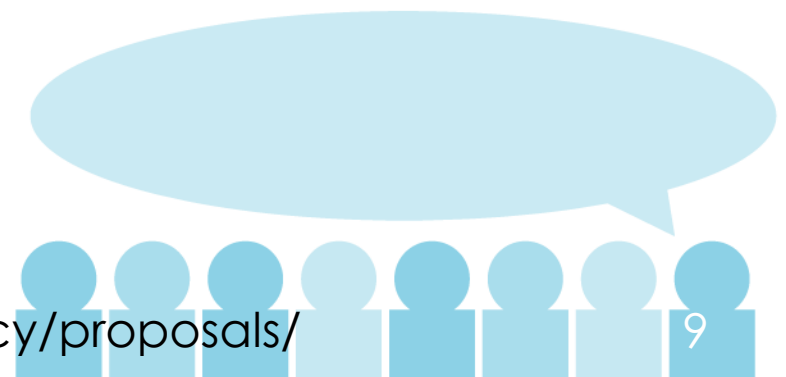
- **4 Draft Policies**
 - Being presented today
 - AC needs you to help us determine what to do with these
 - Fair, sound and supported by the community?
- **2 Policy Proposals**
 - Newer items
 - We are working with the authors to ensure they are clear and in-scope, then merit discussion on PPML



Draft Policies

1. **Recommended Draft Policy ARIN-2013-1:
Section 8.4 Inter-RIR Transfers of ASNs**
2. **Draft Policy ARIN-2013-2: 3GPP Network IP
Resource Policy**
3. **Draft Policy ARIN-2013-4: RIR Principles**
4. **Draft Policy ARIN-2013-5: LIR/ISP and End-user
Definitions**

Text available at: <https://www.arin.net/policy/proposals/>



Proposals

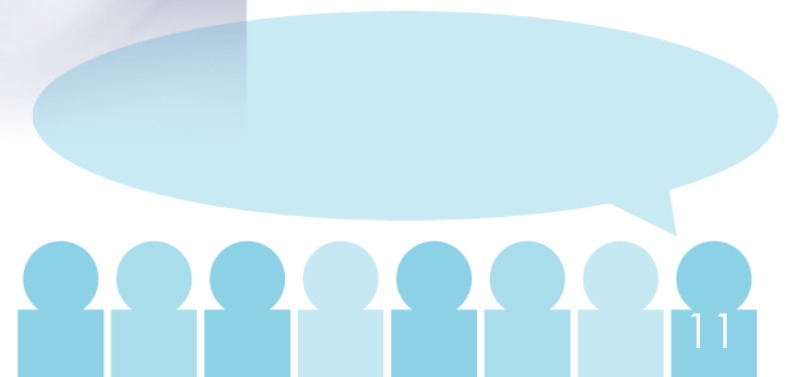
- **ARIN-prop-186 Section 8.2 Reorganizations**
 - Would return the word “reorganizations” to Merger and Acquisition transfer policy.
 - AC suggested this could be an editorial change. Posted to PPML for community review through 29 May.
- **ARIN-prop-189 Allocation of IPv4 and IPv6 Address Space to Out-of-region Requestors**
 - Would require “....established legal presence in the designated ARIN region of no less than six months, and have a majority of their technical infrastructure and customers in the designated ARIN region.”

Text available at:

https://www.arin.net/policy/proposals/policy_proposal_archive.html



PUBLIC POLICY CONSULTATION





Recommended Draft Policy

2013-1

Section 8.4 Inter-RIR Transfer of ASNs

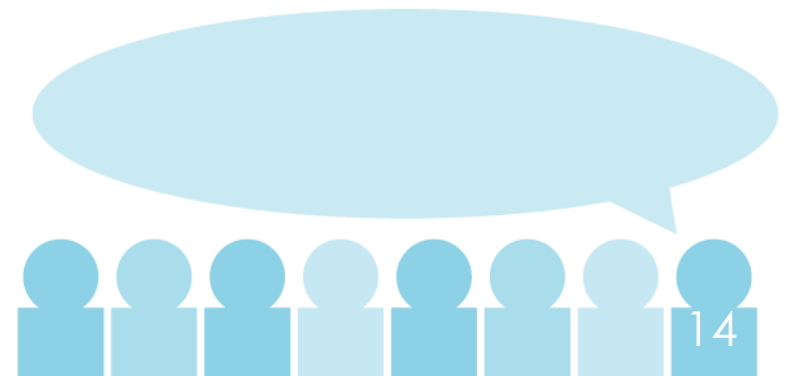
2013-1 - History

1. **Origin: ARIN-prop-183 (Oct 2012)**
2. **AC Shepherds: Scott Leibrand, Robert Seastrom**
3. **Presented at PPC At NANOG 57**
4. **Promoted to Recommended Draft Policy (Mar 2013)**
5. **Presented at ARIN 31 (April 2013)**
 - Remained on AC's docket
6. **Text and assessment online & in Discussion Guide**
https://www.arin.net/policy/proposals/2013_1.html



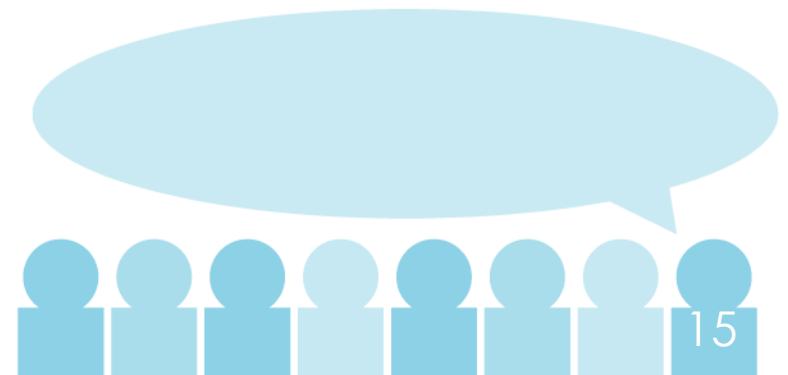
2013-1 – ARIN Staff Summary

- **Would allow the transfer of ASNs along with IPv4 address space in an 8.4 Inter-RIR transfer and applies all of the same criteria currently listed for IPv4 to ASNs**



2013-1 – Status at other RIRs

No similar proposals/discussions



2013-1 – Staff/Legal Assessment

Staff Comments: Issues/Concerns?

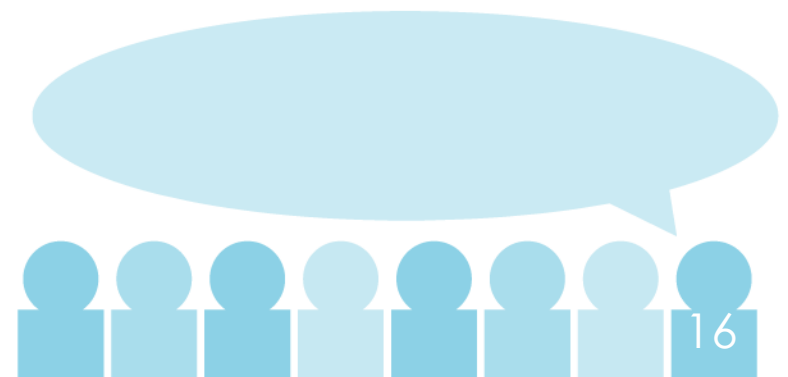
- The policy is clear and can be implemented as written

Implementation: Resource Impact? – Minimal (3 mos.)

- Updated guidelines and staff training

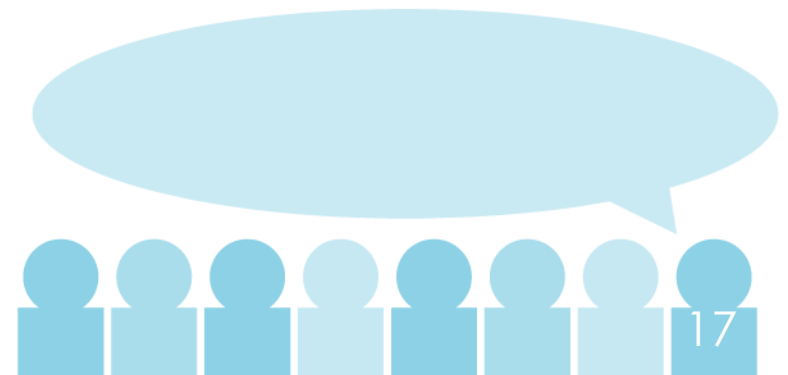
Legal Assessment

- Poses no significant legal issues



2013-1 – Previous Discussion

- **PPML as a Recommended Draft Policy**
 - No posts for or against
- **ARIN 31**
 - 7 in favor and 8 against (102 people)
 - Should AC continue to work on this?
 - 8 in favor and 12 against





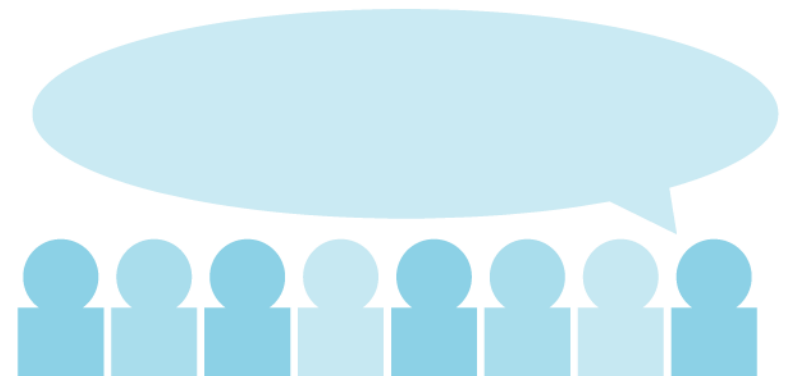
Recommended Draft Policy

2013-1

Section 8.4 Inter-RIR Transfer of ASNs

2013-1 – Problem Statement

- ASNs are already transferable within the ARIN region but are not transferable under inter-RIR resource transfer policies. This proposal would also allow transfers with another participating RIR.



2013-1 – Benefits

- Allows idle ASN resources to be recovered and utilized efficiently and where needed
- Allows the registry to be updated to reflect who is actually using which ASNs
- ASN transfers are already allowed: this would just allow them between organizations served by different RIRs



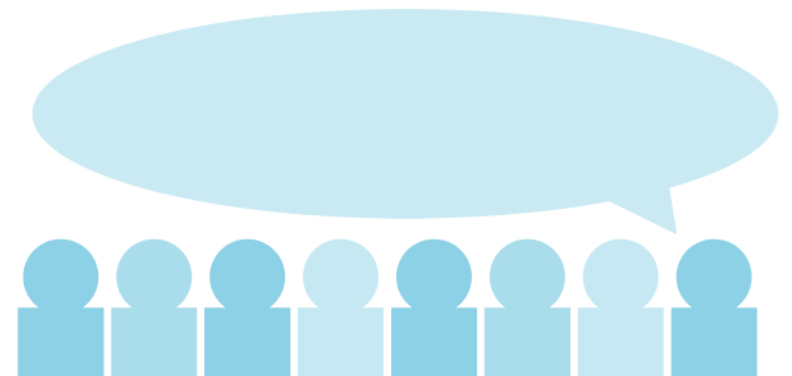
2013-1 – Drawbacks

- The proposal may be unnecessary
 - Some have argued that within-ARIN ASN transfers were unnecessary, so they believe allowing inter-RIR ASN transfers is also unnecessary for the same reasons.
 - This policy change has no effect unless another RIR adopts a similar policy to allow inter-RIR ASN transfers.
 - There is currently no shortage of ASNs.



2013-1 – Discussion questions

- Is this proposal necessary and useful?
- Should the AC move the policy forward or abandon it?



2013-1 Appendix – Draft Policy Text

Add the red underlined text to the first and fourth bullet points of Section 8.4, so that they read:

- The source entity must be the current rights holder of the IPv4 address resources or ASNs to be transferred, as recognized by the RIR responsible for the resources, and not be involved in any dispute as to the status of those resources.
- Source entities within the ARIN region must not have received a transfer, allocation, or assignment of that same resource type (IPv4 number resource or ASN) from ARIN for the 12 months prior to the approval of a transfer request. This restriction does not include M&A transfers.

2013-1 Appendix – AC assessment

Enables fair and impartial resource administration, supporting the goals of efficient utilization and accurate registration, by allowing for the inter-RIR transfer of ASN resources under the same guidelines already allowed for within-ARIN ASN transfers and inter-RIR IPv4 number resource transfers. Discussion to date has identified moderate support for the proposal. Most opposition to date has centered on the argument that the proposal is unnecessary, but the AC shepherds believe that it is worthwhile to allow transfers of ASNs, to help ensure that idle resources are both recovered and utilized efficiently and where needed, and to allow the registry to be updated to reflect who is actually using which ASNs.

2013-1 Appendix – Current NRPM 8.4

8.4. Inter-RIR Transfers to Specified Recipients

Inter-regional transfers may take place only via RIRs who agree to the transfer and share reciprocal, compatible, needs-based policies.

Conditions on source of the transfer:

- The source entity must be the current rights holder of the IPv4 address resources recognized by the RIR responsible for the resources, and not be involved in any dispute as to the status of those resources.
- Source entities outside of the ARIN region must meet any requirements defined by the RIR where the source entity holds the registration.
- Source entities within the ARIN region will not be eligible to receive any further IPv4 address allocations or assignments from ARIN for a period of 12 months after a transfer approval, or until the exhaustion of ARIN's IPv4 space, whichever occurs first.
- Source entities within the ARIN region must not have received a transfer, allocation, or assignment of IPv4 number resources from ARIN for the 12 months prior to the approval of a transfer request. This restriction does not include M&A transfers.
- The minimum transfer size is a /24.

Conditions on recipient of the transfer:

- The conditions on a recipient outside of the ARIN region will be defined by the policies of the receiving RIR.
- Recipients within the ARIN region will be subject to current ARIN policies and sign an RSA for the resources being received.
- Recipients within the ARIN region must demonstrate the need for up to a 24-month supply of IPv4 address space.
- The minimum transfer size is a /24.

2013-1 Appendix –NRPM 8.4 w/ 2013-1

8.4. Inter-RIR Transfers to Specified Recipients

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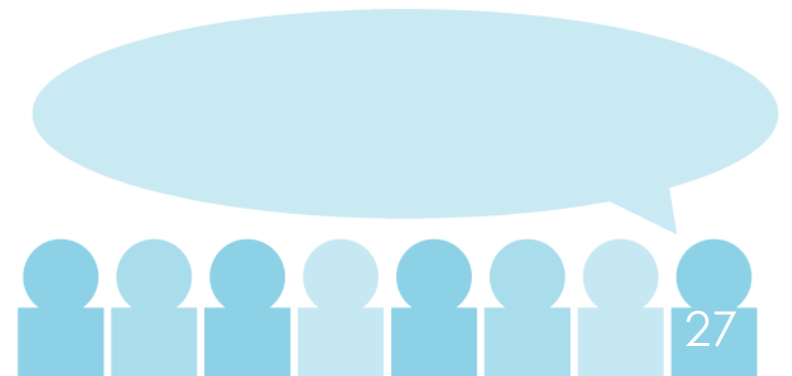
Conditions on source of the transfer:

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- Source entities outside of the ARIN region must meet any requirements defined by the RIR where the source entity holds the registration.
- Source entities within the ARIN region will not be eligible to receive any further IPv4 address allocations or assignments from ARIN for a period of 12 months after a transfer approval, or until the exhaustion of ARIN's IPv4 space, whichever occurs first.
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- Recipients within the ARIN region must demonstrate the need for up to a 24-month supply of IPv4 address space.
- The minimum transfer size is a /24.

Discussion





Draft Policy 2013-2

3GPP Network IP Resource Policy

2013-2 - History

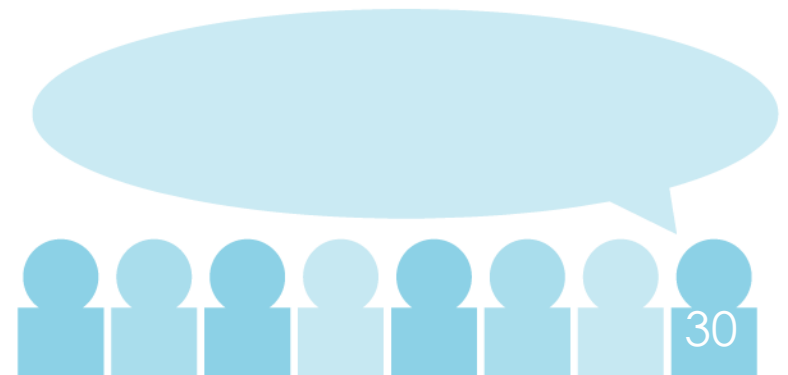
1. **Origin: ARIN-prop-184 (Mar 2013)**
2. **AC Shepherds: Scott Leibrand, Robert Seastrom**
3. **Presented at ARIN 31 (Apr 2013)**
 - Remained on AC's docket
4. **Text online & in Discussion Guide**

https://www.arin.net/policy/proposals/2013_2.html



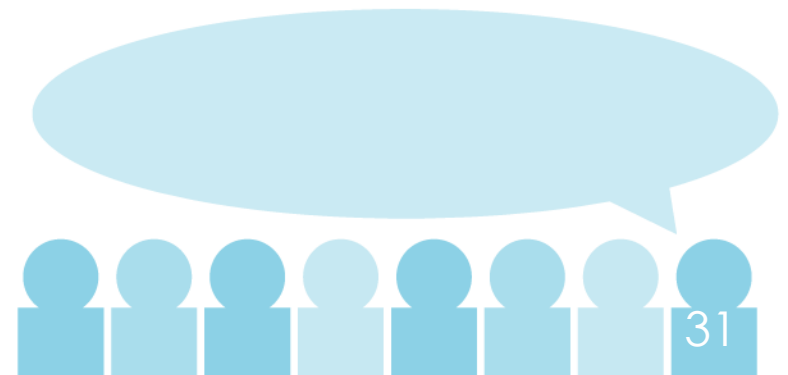
2013-2 – ARIN Staff Summary

- **Would lower utilization threshold for additional IPv4 allocations for 3GPP networks**



2013-2 – Status at other RIRs

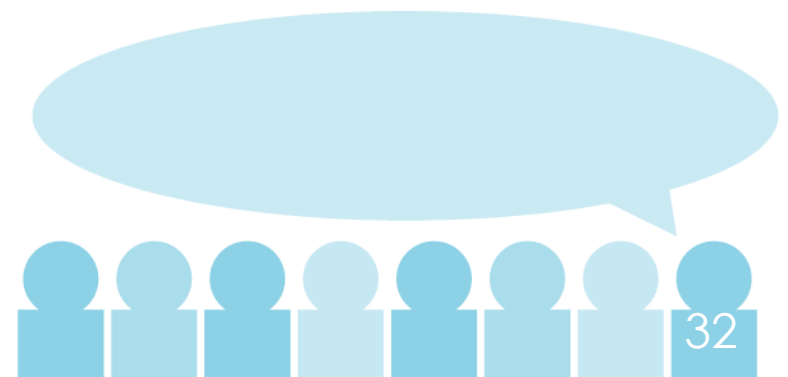
No similar proposals/discussions



2013-2 – Staff/legal Assessment

Still being developed by the AC

- **Posted to PPML and presented for community discussion**
 - Fair and Impartial Number Resource Administration?
 - Technically Sound?
 - Supported by the Community?
- **Staff/legal assessment to be performed upon request of AC (when draft is fully developed)**



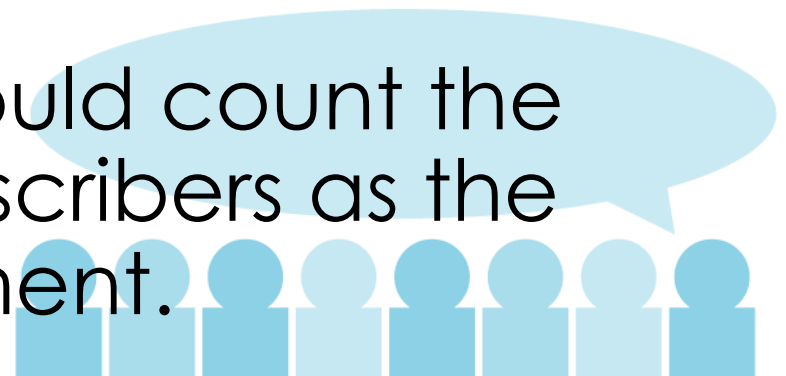


Draft Policy 2013-2

3GPP Network IP Resource Policy

2013-2 – Original Proposal Summary

- The purpose of this policy proposal is to change the way ARIN counts utilization for mobile network operators.
 - For example, instead of 80% utilization, one option would count a block as utilized if 50% is in use by customers.
 - A second option would count the total number of subscribers as the utilization measurement.



2013-2 – Problem Statement

- Some mobile networks are using non-RIR-assigned space internally to meet customer demand. However, there is insufficient RFC1918 & RFC6598 space available for internal use, so other unassigned space is currently being used.
- As this unassigned space is brought into service via reclamation, returns, and transfers, it is no longer possible to use it internally, so globally unique space must be used instead.
- Current ARIN policy requiring 80% utilization conflicts with operator's failover architecture.



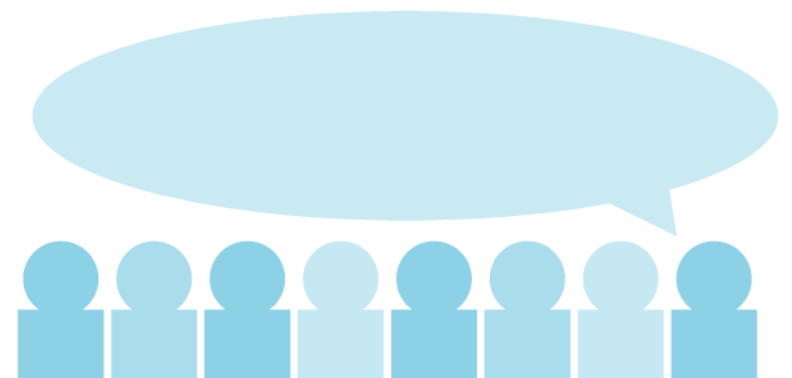
2013-2 – ARIN 31 Discussion

- Many felt this problem was specific to the architectural needs of a single company
- Many felt that more information would be required to show that this is a real problem
- Some felt that this was a broader problem that might justify a broader fix



2013-2 – Benefits of solving this

- Address a real problem for at least some operators
- Allow those operators to reduce use of NAT
- Avoid address conflicts as previously unused space as it gets transferred and routed



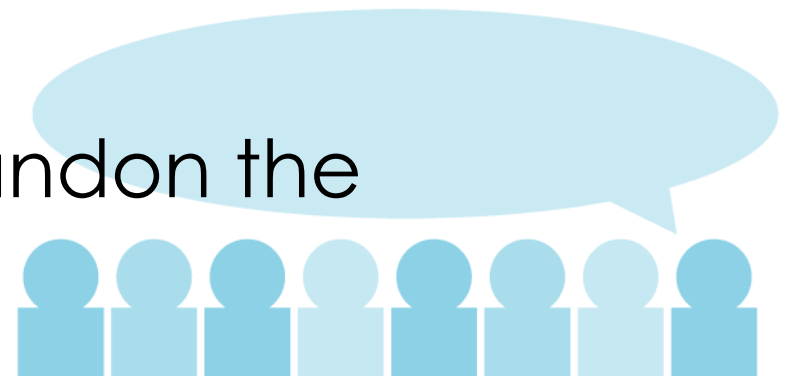
2013-2 – Potential Drawbacks

- Would likely accelerate IPv4 depletion, if adopted in time
- Unclear how broadly the same problem statement applies to other operators
- Outstanding technical questions?
- Could this be solved with technology instead of policy?
- Perhaps we should stop changing IPv4 policy



2013-2 – Discussion points

- Is this an important problem to try to solve?
- If so, how would you prefer we approach solving it?
 - 50% of simultaneously attached users?
 - 80-90% of total subscribers?
 - Broaden NRPM 4.2.3.7.3.1. Residential Market Area to cover “existing devices” as well as “homes”?
 - Some other approach?
- If not, should the AC abandon the proposal?



2013-2 Appendix – Existing NRPM text

4.2.3.7.3.1. Residential Market Area

- In most cases, ISPs that have residential subscribers assign address space to their access infrastructure to which their customers connect rather than to individual subscribers. This assignment information regarding each market area holding an address block should be entered via SWIP (or by using RWhois) with the network name used to identify each market area. Initial allocations are based on total number of homes that could purchase the service in a given market area.
- Using SWIP or RWhois, residential access ISPs must show that they have reassigned at least 80% of their current address space, with a 50 to 80% utilization rate, in order to request additional addresses.

2013-2 Appendix – Possible NRPM text

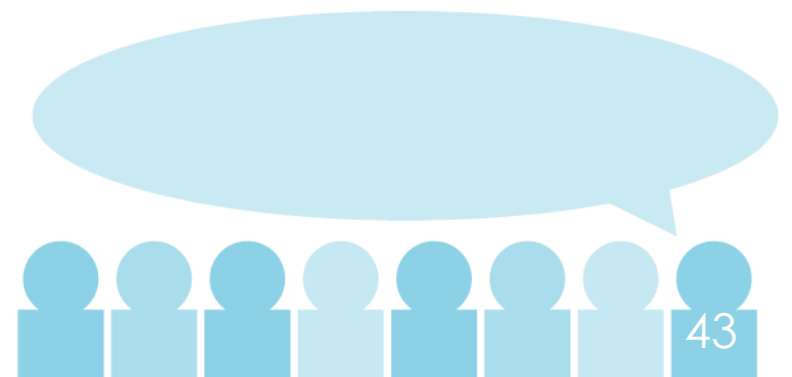
4.2.3.7.3.1. Residential Market Area

- ISPs that have residential subscribers may assign address space to their access infrastructure to which their customers connect rather than to individual subscribers. This assignment information regarding each market area holding an address block should be entered via SWIP (or by using RWhois) with the network name used to identify each market area. Initial allocations are based on total number of existing homes or devices that could purchase the service in a given market area.
- Using SWIP or RWhois, residential access ISPs must show that they have reassigned at least 80% of their current address space, with a 50 to 80% utilization rate, in order to request additional addresses.

2013-2 Appendix – Technical background

- Current 3GPP architectures consist of hierarchical aggregation, from cell site up to anchor nodes, approximately one per NFL city. Anchor nodes are the point where IP addresses are assigned and topologically positioned in the network. Generally an anchor node must be provisioned with enough addresses to handle all simultaneously attached users, plus enough headroom to handle failover from an adjacent anchor node in the event of an outage.
- Capacity planning generally ensures that all anchor nodes have approximately the same number of attached users at steady state. Moving addresses between anchor nodes would require significant renumbering effort and substantial increases in operational complexity, so cannot be performed during an outage. Generally addresses are not renumbered between anchor nodes: instead, aggregation nodes can be rehomed as needed to balance steady state capacity levels.
- Because of the 3GPP architecture's failover and capacity planning requirements, all cellular networks target approximately 50% simultaneous usage of each anchor node's IP addresses. However, even at 50% usage, the total number of subscribers generally exceeds the number of addresses needed.

Discussion





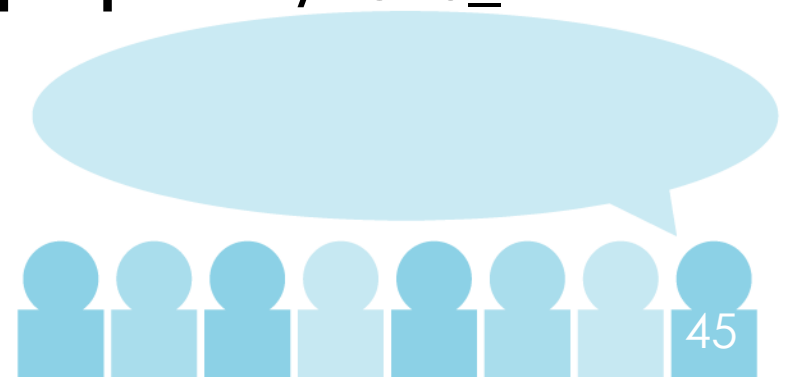
Draft Policy 2013-4

RIR Principles

2013-4 - History

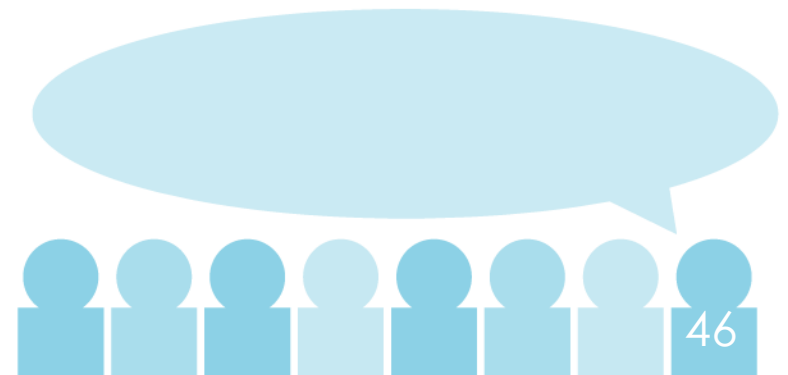
1. **Origin: ARIN-prop-187 (Apr 2013)**
2. **AC Shepherds: Chris Grundemann, Cathy Aronson, and Owen DeLong**
3. **Draft Policy (Apr 2013)**
4. **Text online & in Discussion Guide**

https://www.arin.net/policy/proposals/2013_4.html



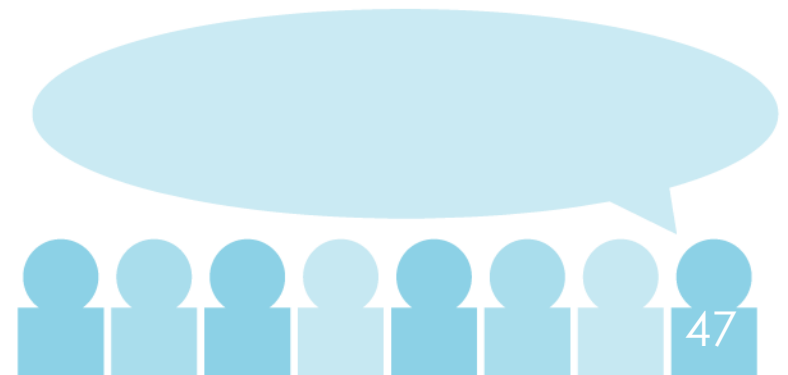
2013-4 – ARIN Staff Summary

- From the problem statement, “...the guiding principles of stewardship are not currently being carried forward into [RFC 2050bis]”



2013-4 – Status at other RIRs

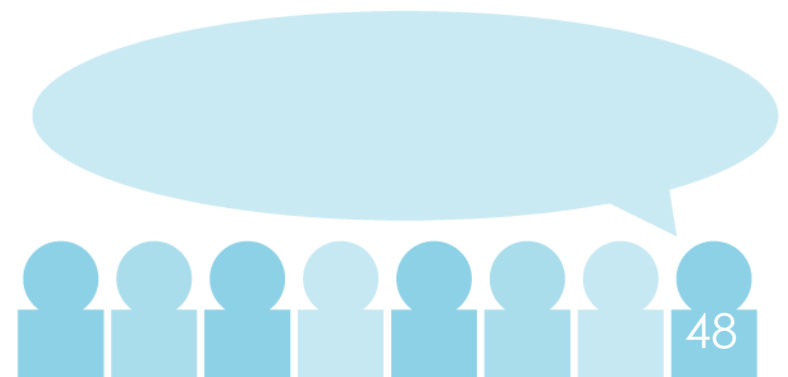
No similar proposals/discussions



2013-4 – Staff/legal Assessment

Still being developed by the AC

- **Posted to PPML and presented for community discussion**
 - Fair and Impartial Number Resource Administration?
 - Technically Sound?
 - Supported by the Community?
- **Staff/legal assessment to be performed upon request of AC (when draft is fully developed)**





Draft Policy 2013-4

RIR Principles

2013-4: RIR Principles

Author: Jason Schiller

AC Shepherds: Chris Grundemann, Cathy Aronson and Owen DeLong

- **The original text in RFC 2050 both "describes the registry system for the distribution of globally unique Internet address space and registry operations" and provides "rules and guidelines [principles] governing the distribution of this address space."**
- **Current work in IETF for a RFC 2050bis leaves out language of the principles of stewardship which have always been enshrined in ARIN policy and the NRPM.... namely: Conservation, Routability, Registration**

Draft Policy 2013-4 seeks to express those same principles within the ARIN NRPM such that the ability to reference current practice in policy has a place of reference.

Specifically the Draft Policy seeks to insert into the NRPM:

- **Section 0: Principles and Goals of the Internet Registry System**

- 0.1. Efficient utilization based on need (Conservation)**

- 0.1.1. Documented Justified Need (Needs Based)**

- 0.2. Hierarchical aggregation (Routability)**

- 0.3. Uniqueness (Registration)**

- 0.4. Stewardship**



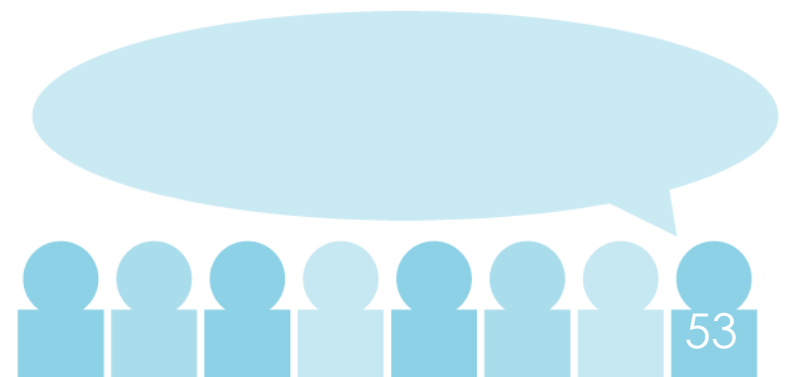
PUBLIC POLICY

CONSULTATION

- According to ARIN's Policy Development Process (PDP), when a proposal becomes a Draft Proposal, the ARIN Advisory Council of 15 members has a duty work with the author and the community to ensure that there is a clear problem statement and proposed policy language will lead to policy which is fair, technically sound and supported by the community.
- The crux of our need is to seek your input on whether what appears in your Discussion Guide accomplishes this task and whether you are in support of that language and/or continuing work on this Draft Policy
- This DP has roused lots of discussion from a few people for and against
- Much of the discussion has been about the actual practice of allocation before RIRs and 2050 and the current need/applicability for these guiding principles in either IPv4 or IPv6 allocation/assignment policy



Discussion





Draft Policy 2013-5

LIR/ISP and End-user Definitions

2013-5 - History

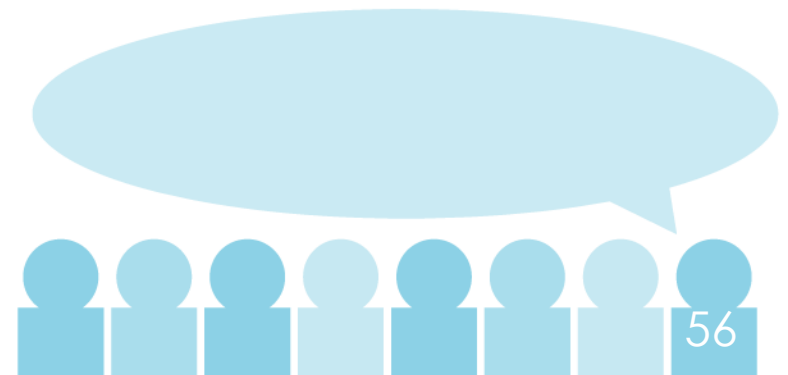
1. **Origin: ARIN-prop-187 (May 2013)**
2. **AC Shepherds: Kevin Blumberg, Owen DeLong and John Springer**
3. **Draft Policy (May 2013)**
4. **Text online & in Discussion Guide**

https://www.arin.net/policy/proposals/2013_5.html



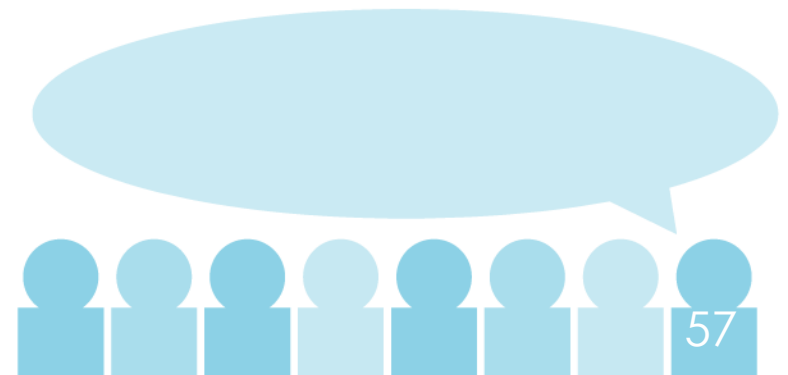
2013-5 – ARIN Staff Summary

- **Updates definitions of LIR/ISP and End-user**



2013-5 – Status at other RIRs

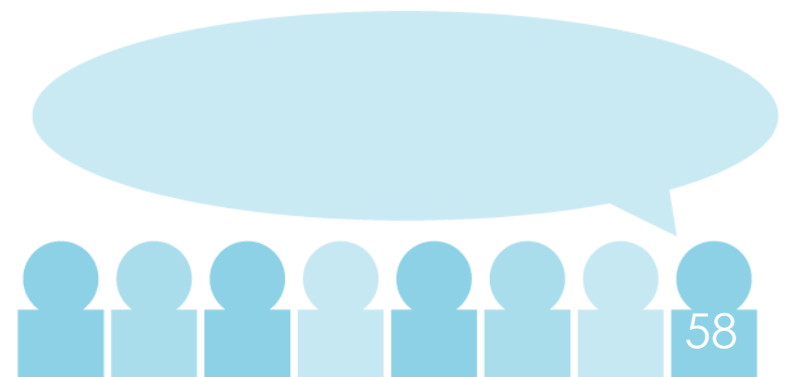
No similar proposals/discussions



2013-5 – Staff/legal Assessment

Still being developed by the AC

- **Posted to PPML and presented for community discussion**
 - Fair and Impartial Number Resource Administration?
 - Technically Sound?
 - Supported by the Community?
- **Staff/legal assessment to be performed upon request of AC (when draft is fully developed)**





Draft Policy 2013-5

LIR/ISP and End-user Definitions

Current Definitions

- **NRPM 2.4 Local Internet Registry**

- *“An IR that primarily assigns address space to the users of the network services that it provides. LIRs are generally Internet Service Providers (ISPs)”*

- **NRPM 2.6 “End-User”**

- *“An end-user is an organization receiving assignments of IP addresses exclusively for use in its operational networks”*

Draft Policy Text

- **2.4. Local Internet Registry (LIR) / Internet Service Provider (ISP)**

The terms Internet Service Provider (ISP) and LIR are used interchangeably in this document. A Local Internet Registry (LIR) is an IR that assigns address space to the users of the network services that it provides. Therefore, LIRs / ISPs are organizations that reassign addresses to end users and/or reallocate addresses to other ISPs/LIRs.

- **2.6. End-user**

An end-user is an organization receiving assignments of IP addresses exclusively for use in its operational networks, and does not register any reassignments of that space.

Issues Raised at ARIN 31

- No current definition of ISP in NRPM
- Newer technologies do not clearly fit either category (e.g. cloud computing services, “infrastructure as a service” providers, VPN providers)
- Difficult to determine exactly who is an End user and who is an ISP
- With recent policy change to 3 month supply of IPv4 for ISPs, may be advantageous to be in the End-user category

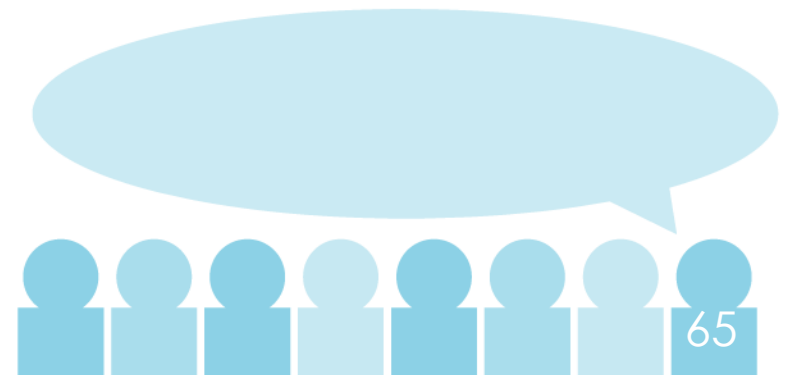
Questions for the Community

- Should there be a clear definition of End-user and ISP in NRPM?
- Should staff determine whether an org is an ISP or an End-user or should the org be able to choose?
- Should an ISP be able to switch to become an End-user and vice versa thus allowing a different set of policy criteria?

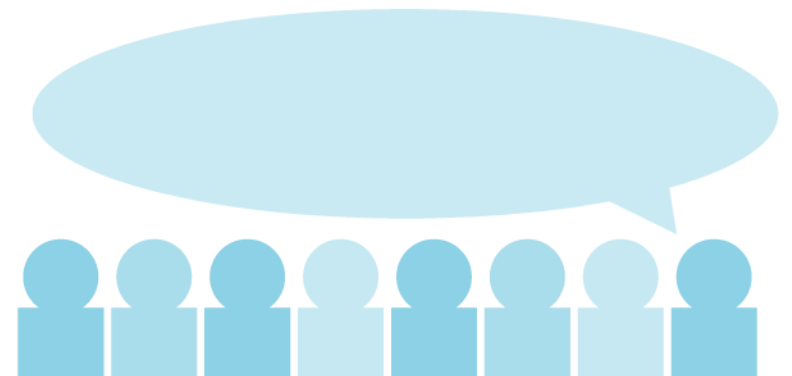
Potential Outcomes

- 1. Decide that this is not a significant issue**
- 2. Harmonize ISP and end-user policies so that there is no distinction between the two**
- 3. Add clear definitions of end-user and ISP from a technical perspective; delineate their technical characteristics**

Discussion



Next ARIN Meeting



PUBLIC POLICY CONSULTATION

