Guiding the Evolution of the IANA Protocol Parameter Registries

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http://www.iab.org/activities/programs/iana-evolution-program/

Outline

- The very broad context and our goal
- Background
- What do we want your feedback on

Context

- '*Globalization of the critical Internet Infrastructure resources*'

  - Code for (mainly) globalizing the of the DNS ro

    - (whereby different actors have different ideas about what globalizing means)

- Important but not the only component of the Internet Governance debates that are currently taken place in various venues

an IANA function

Goal

- The IAB wants to reaffirm the principles on which it has been basing its policy regarding IANA so that the leadership can make assertions about the IETFs position in the various discussions that take place in this context.

NOTE

- All this discussion is not about how ICANN and the IANA team are doing the work.

- Flawlessly and professionally.

- Subject to MOUs and SLAs

Background

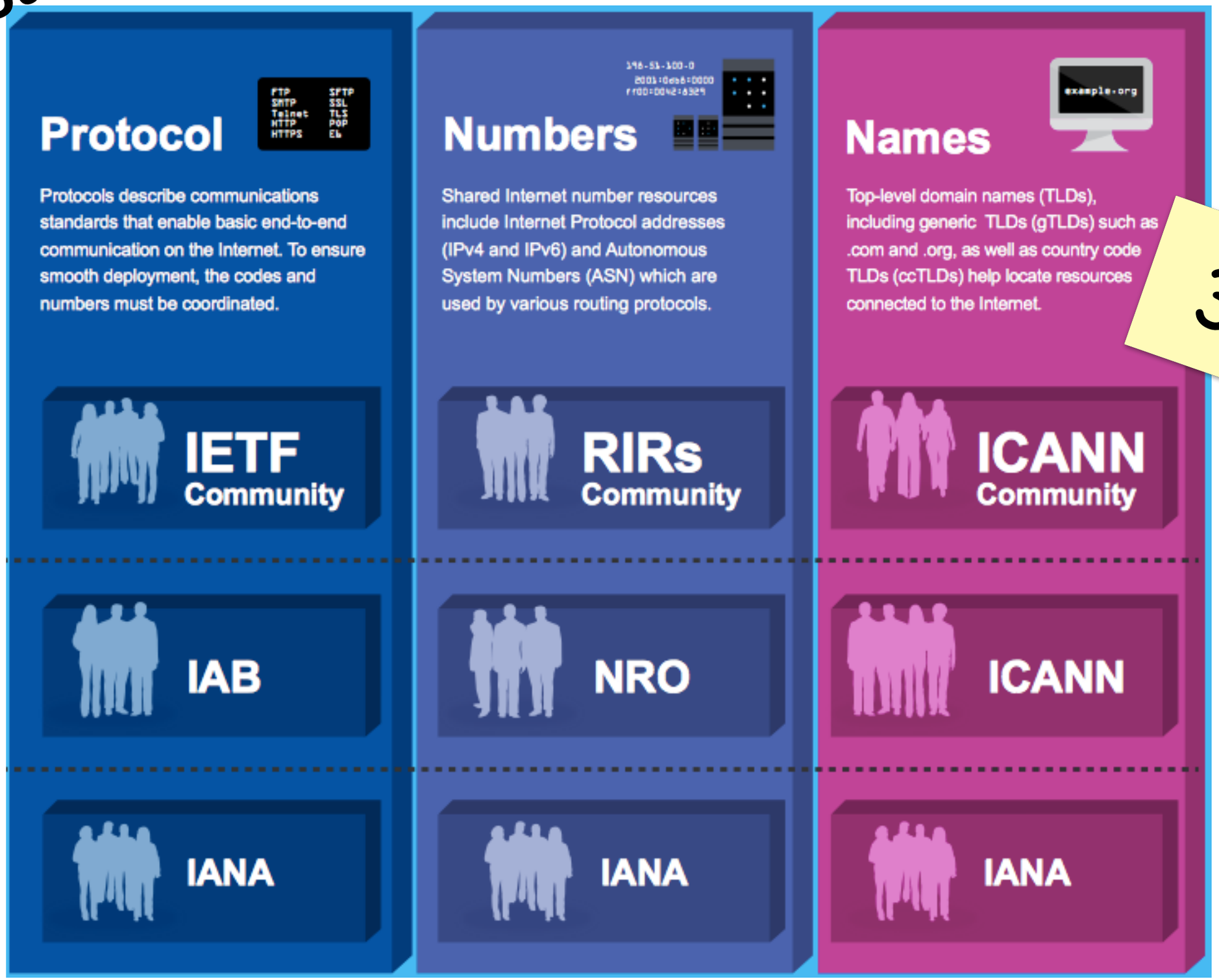
The IANA protocol parameters

- The IETF, and its predecessors, have always published its parameters separately from its standards.

A critical publication function

- The Internet Assigned Numbers Authority has evolved since the early days when this function was performed under the leadership of Jon Postel

Background



3x3

See: https://www.internetsociety.org/sites/default/files/is-internetresources-201308-en.pdf
Referenced from:
http://www.iab.org/discussions/iana-framework-evolution/ and draft-iab-iana-framework

Background

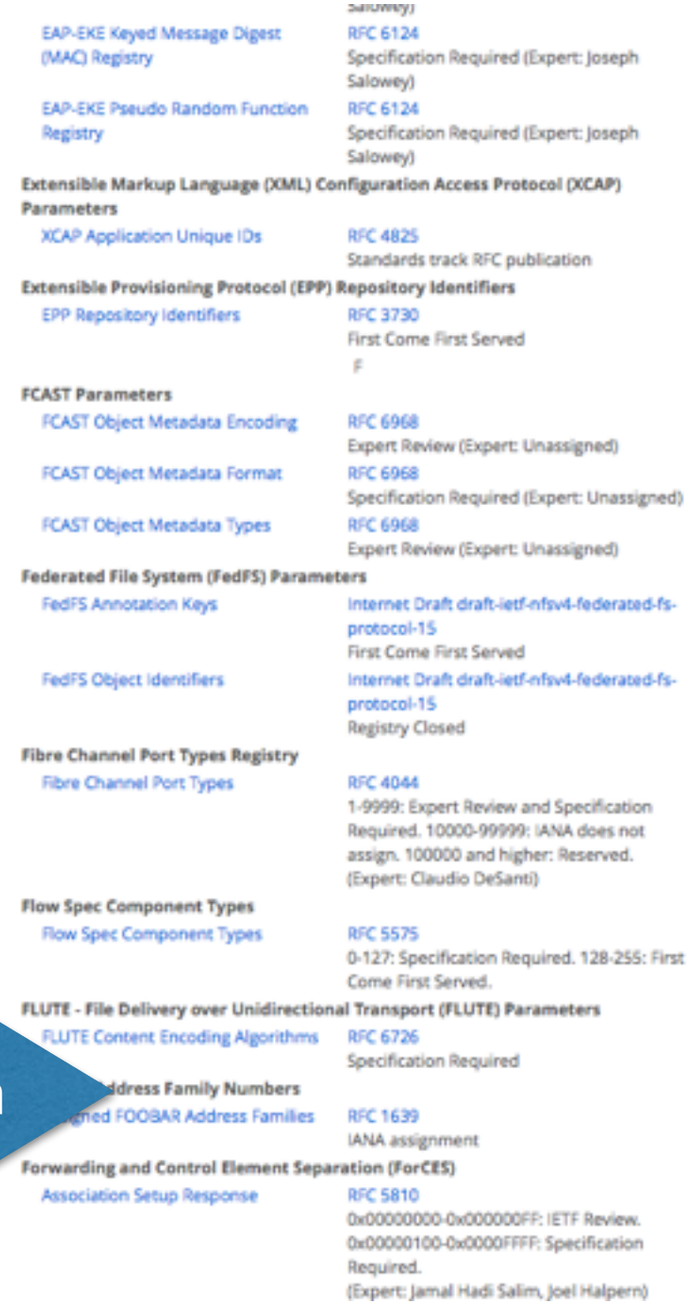
‘policy’

IETF RFC

oversight

publication

iana publication



EAP-EKE Keyed Message Digest (MAC) Registry	RFC 6124 Specification Required (Expert: Joseph Salowey)
EAP-EKE Pseudo Random Function Registry	RFC 6124 Specification Required (Expert: Joseph Salowey)
Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Parameters	
XCAP Application Unique IDs	RFC 4825 Standards track RFC publication
Extensible Provisioning Protocol (EPP) Repository Identifiers	
EPP Repository Identifiers	RFC 3730 First Come First Served
FCAST Parameters	
FCAST Object Metadata Encoding	RFC 6968 Expert Review (Expert: Unassigned)
FCAST Object Metadata Format	RFC 6968 Specification Required (Expert: Unassigned)
FCAST Object Metadata Types	RFC 6968 Expert Review (Expert: Unassigned)
Federated File System (FedFS) Parameters	
FedFS Annotation Keys	Internet Draft draft-ietf-nfsv4-federated-fs-protocol-15 First Come First Served
FedFS Object Identifiers	Internet Draft draft-ietf-nfsv4-federated-fs-protocol-15 Registry Closed
Fibre Channel Port Types Registry	
Fibre Channel Port Types	RFC 4044 1-9999: Expert Review and Specification Required. 10000-99999: IANA does not assign. 100000 and higher: Reserved. (Expert: Claudio DeSanti)
Flow Spec Component Types	
Flow Spec Component Types	RFC 5575 0-127: Specification Required. 128-255: First Come First Served.
FLUTE - File Delivery over Unidirectional Transport (FLUTE) Parameters	
FLUTE Content Encoding Algorithms	RFC 6726 Specification Required
ddress Family Numbers	
gned FOOBAR Address Families	RFC 1639 IANA assignment
Forwarding and Control Element Separation (ForCES)	
Association Setup Response	RFC 5810 0x00000000-0x000000FF: IETF Review. 0x00000100-0x0000FFFF: Specification Required. (Expert: Jamal Hadi Salim, Joel Halpern)

See: https://www.internetsociety.org/sites/default/files/is-internetresources-201308-en.pdf
Referenced from:
http://www.iab.org/discussions/iana-framework-evolution/ and draft-iab-iana-framework

Background

For context not for historic reference

History

- In the late 90s the administrative functions moved out of ISI and the USG entered into a contract with ICANN governing ICANN's administration of the names, numbers, and protocol parameters registries. We signed an agreement with ICANN to have its IANA department administer the protocols parameters function, and around the same time.

- Since the mid-2000s, the IAB has been suggesting that it would be beneficial to evolve away from [potential] USG involvement of the protocol parameters function, including in formal comments to the USG during the most recent contract re-negotiation. In practice the contract has had no impact on the protocol parameters function.

- Consensus on the role and function of IETF protocol parameters registry operator is documented in RFC 6220.

Background

Stewardship

- Globalization while respecting stability and continuity for other players in the environment
  - No drastic steps if the work that needs to be done gets done
  - Realizing that stability and continuity serves the private sector that relies on the protocol parameters
  - Realizing that coordination with other I-institutions is important

Background

I-Institutions and interrelation

- Coordination between the entities in these columns is important for predictable and stable stewardship of the resources:

- discussion about use of domain names in protocols (e.g special-use domain names, RFC 6761)

- .ARPA management

- 7/8th of the IPv6 space not assigned to specific protocol use.

Background

Decisions by others made on our behalf

- During the last round of review of the USG-IANA contract we provided feedback that ended up as safeguards in the contract

- We don't want to globalization evolve to a situation where a 3rd party makes decisions on the IETF's behalf

- A number of MOUs and SLA document the mutual commitment between ICANN and the IETF

Consistency in Policy

- The principles you are about to see are not new. They have guided the IAB in its work for over a decade.
- They have never been voiced this explicitly.
- We would like to reaffirm them

1. The IETF protocol parameters function has been and continues to be capably provided by the Internet community.

The strength and stability of the function and its foundation within the Internet community are both important given how critical protocol parameters are to the proper functioning of IETF protocols.

We think the structures that sustain the protocol parameters function needs be strong enough that they can be offered independently by the Internet community, without the need for backing from external parties. And we believe we largely are there already, although the system can be strengthened further, and continuous improvements are being made.

2. The administration of the protocol parameters function by ICANN is working well for the Internet and the IETF.

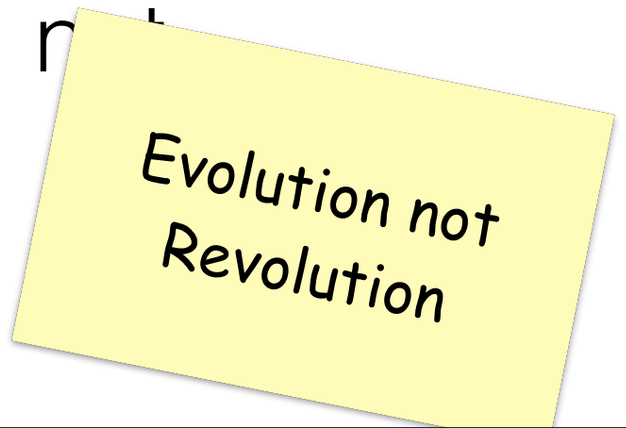
We are pleased with the publication and maintenance of the protocol parameter function and the coordination of the evaluation of registration requests through the IANA function provided by ICANN.

3. The IETF protocol parameters function requires openness, transparency, and accountability.

Existing documentation of how the function is administered and overseen is good [RFC2860,RFC6220], but further articulation and clarity may be beneficial. It is important that the whole Internet community can understand how the function works, and that the processes for registering parameters and holding those who oversee the protocol parameter function accountable for following those processes are understood by all interested parties. We are committed to making improvement[illegible]here if necessary.

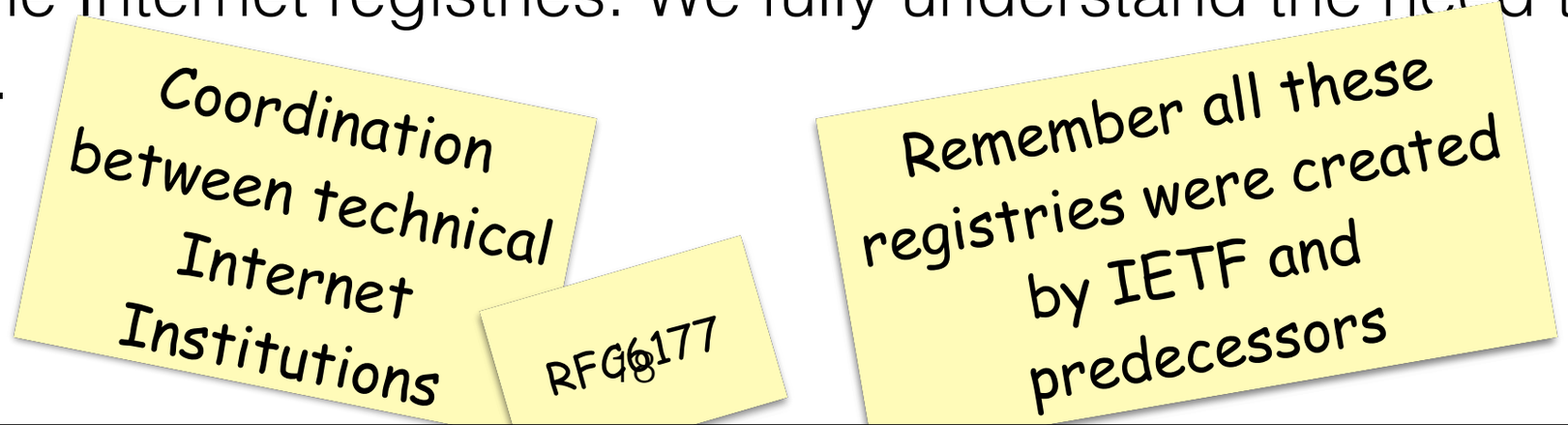
4. Any contemplated changes to the protocol parameters function should use the current RFCs and model as the starting point.

The protocol parameters function is working well, and as a result wholesale changes to the role of the IETF vis a vis the function are not warranted. The IETF/IANA Memorandum of Understanding [RFC2860] is a good model to work from in the event that other parties do want to contemplate changes. Put quite simply: evolution, n
revolution.



5. The Internet architecture requires and receives capable service by Internet registries.

The stability of the Internet depends on capable provision of not just IETF protocol parameters, but IP numbers, domain names, and other registries. Furthermore, DNS and IPv4/IPv6 are IETF-defined protocols. Thus we expect the role of the IETF in standards development, architectural guidance, and allocation of certain name/number parameters to continue. IP multicast addresses and special-use DNS names are two examples where close coordination is needed. The IETF will continue to coordinate with ICANN, the RIRs, and other parties that are mutually invested in the continued smooth operation of the Internet registries. We fully understand the need to work together.



6. The IETF will continue its direction and stewardship of the protocol parameters function as an integral component of the IETF standards process and the use of resulting protocols.

RFC 6220 specifies the role and function of the protocol parameters registry, which is critical to IETF standards processes and IETF protocols. We see no need to revisit or reconsider our current approach with regard to protocol parameters, including the ability to delegate operational responsibility for registries to other organizations.

Fin

IANA History & Context

backup slides and reference material

IETF-IANA Timeline

- March 26, 1972: “Well Known Socket Numbers”, RFC 322 by Vint Cerf and Jon Postel.
- March 1990: First reference to “IANA” in RFC 1060, authored by Joyce Reynolds and Jon Postel.
- October 1998: “Guidelines for Writing an IANA Considerations Section in RFCs” (BCP26)
- June 1999: IETF signs an MOU with ICANN relating to IANA (published as RFC 2860). Most recent supplement agreement:
  - April 2013: MOU supplemental agreement: http://www.icann.org/en/about/agreements/ietf/ietf-iana-agreement-2013-04jun13-en.pdf
- September 2001: “Management Guidelines & Operational Requirements for the “arpa””, BCP 52
- April 2011: “Defining the Role and Function of IETF Protocol Parameter Registry Operators”, RFC 6220

RFC 6220

- “…although it may delegate authority for some specific decisions, the IETF asserts authority and responsibility for the management of all of its protocol parameters and their registries, even while it generally remains isolated from the selection of particular values once a registration is approved.”
- “The IAB has the responsibility to appoint an organization to undertake the delegated functions of the Protocol Parameter Registry Operator for each IETF protocol parameter. Specifically, the IAB defines the role and requirements for the desired functions. The IAOC is responsible for identifying a potential vendor, and once under agreement, managing the various aspects of the relationships with that vendor. To be clear, the IAB is in the deciding role (e.g., for appointment and termination), but must work in close consultation with the IAOC.”

USG-IANA Timeline

- 1988: Internet Assigned Numbers Authority (IANA) funded by a contract between DARPA and the Information Sciences Institute at USC.
- April 1997: Contract between DARPA and ISI expires, but is extended.
- November 25, 1998: MOU between U.S. Department of Commerce and ICANN:
  - http://www.icann.org/en/about/agreements/mou-jpa/icann-mou-25nov98-en.htm
- December 24, 1998: USC enters into an IANA transition agreement with the Internet Corporation for Assigned Names and Numbers (ICANN), effective January 1, 1999.
  - http://www.icann.org/en/about/agreements/usc-icann-transition
- February 9, 2000: Department of Commerce enters into an agreement with ICANN to perform the IANA functions.
  - http://www.icann.org/en/about/agreements/iana/iana-contract-09feb00-en.htm
- March 17, 2003: Contract between ICANN and NTIA for the IANA function
  - http://www.icann.org/en/about/agreements/iana/iana-contract-17mar03-en.htm
- August 14, 2006: Contract between ICANN and NTIA for the IANA function
  - http://www.icann.org/en/about/agreements/iana/iana-contract-14aug06-en.pdf
- October 1, 2012: Contract between ICANN and NTIA for the IANA function
  - http://www.icann.org/en/about/agreements/iana/contract-01oct12-en.pdf

Source: http://www.icann.org/en/about/agreements

IAB Comments During the IANA Contract Process

- March 30, 2011: IAB response to Request for Comments on the IANA Functions:
  - "We believe that the IANA functions should evolve together. There exists synergy and interdependencies between the functions, and having them performed by a single operator facilitates coordination among registries, even those that are not obviously related."
  - "Indeed, the IANA functions contract only addresses the registry maintenance role. That role is limited to the allocation or assignment of values in the registries and publishing those accordingly. The maintenance role is mechanical and IANA implements, but doesn't define or develop a policy."
  - "At the same time, the current operation of the protocol parameters space is working well, and there is no immediate or compelling need to make changes. Changes would inevitably be disruptive during a transition period, and any transition would have to be carefully planned and managed with strong support from the impacted parties."

Source: http://www.iab.org/wp-content/IAB-uploads/2011/04/2011-03-30-iab-iana-noi-response.pdf

IAB Comments (cont'd)

- July, 2011: IAB comment on the IANA Statement of Work:
  - "We don't consider the present situation in which a single governmental agency is seen as having close, management-level, oversight of IANA as ideal and hope that NTIA is working toward more autonomy for the IANA function. At the same time, we recognize the continued value of the NTIA role in the current situation"
- December 16, 2011: IAB Evaluation of IANA Performance
  - "The performance quality evaluation is 'Very Good' based on IETF experience over the last 11 years. Over the last 4 years, performance quality has been high, reliably meeting the service level agreement we have with ICANN, so that performance over this recent period is 'Exceptional'."

Source: http://www.ietf.org/iana.html

2012 NTIA-ICANN Contract Provisions

- Duration
  - Base Year – October 1, 2012 – September 30, 2015
  - Option Year 1 – October 1, 2015 – September 30, 2017
  - Option Year 2 – October 1, 2017 – September 30, 2019
- Fees
  - The Contractor shall provide the services necessary for the operation of the Internet Assigned Numbers Authority (IANA) in accordance with the attached Statement of Work The Contractor may not charge the United States Government for performance of the requirements of this contract.
- C.1.3 Relationship with 'interested and affected parties'
  - The Contractor, in the performance of its duties, must have or develop a close constructive working relationship with all interested and affected parties to ensure quality and satisfactory performance of the IANA functions. The interested and affected parties include, but are not limited to, the multi-stakeholder, private sector led, bottom-up policy development model for the domain name system (DNS) that the Internet Corporation for Assigned Names and Numbers (ICANN) represents; the Internet Engineering Task Force (IETF) and the Internet Architecture Board (IAB); Regional Internet Registries (RIRs); top-level domain (TLD) operators/managers (e.g., country codes and generic); governments; and the Internet user community.

2012 NTIA-ICANN Contract (cont'd)

- C.2.5 Separation of Policy Development and Operational Roles
  - The Contractor shall ensure that designated IANA functions staff members will not initiate, advance, or advocate any policy development related to the IANA functions. The Contractor's staff may respond to requests for information requested by interested and affected parties as enumerated in Section C.1.3 to inform ongoing policy discussions and may request guidance or clarification as necessary for the performance of the IANA functions.
- C.2.6 Transparency and Accountability
  - Within six (6) months of award, the Contractor shall, in collaboration with all interested and affected parties as enumerated in Section C.1.3, develop user instructions including technical requirements for each corresponding IANA function and post via a website.
- C.2.7 Responsibility and Respect for Stakeholders
  - Within six (6) months of award, the Contractor shall, in collaboration with all interested and affected parties as enumerated in Section C.1.3, develop for each of the IANA functions a process for documenting the source of the policies and procedures and how it will apply the relevant policies and procedures for the corresponding IANA function and post via a website.
- C.2.8 Performance Standards
  - Within six (6) months of award, the Contractor shall develop performance standards, in collaboration with all interested and affected parties as enumerated in Section C.1.3, for each of the IANA functions as set forth at C.2.9 to C.2.9.4 and post via a website.

The Montevideo Statement

"The leaders of organizations responsible for coordination of the Internet technical infrastructure globally have met in Montevideo, Uruguay, to consider current issues affecting the future of the Internet…

- They called for accelerating the globalization of ICANN and IANA functions, towards an environment in which all stakeholders, including all governments, participate on an equal footing."

http://www.icann.org/en/news/announcements/announcement-07oct13-en.htm

For More Information

- IETF IANA web page: http://www.ietf.org/iana.html
- ICANN IANA web page: http://www.icann.org/en/about/agreements
- IANA Performance web page: http://www.iana.org/performance