



ICANN and the IANA

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The IANA



Introduction to ICANN



- To reach another person on the Internet you have to type an address into your computer - a name or a number
- ICANN coordinates these unique identifiers across the world
- ICANN **promotes competition** and **develops policy** on the Internet's unique identifiers
- ICANN does not control content, it cannot stop spam, and it does not deal with access to the Internet
- Has hub offices in Los Angeles (HQ), Istanbul, and Singapore
- Has engagement centers in Montevideo, Washington DC, Brussels, Geneva, Beijing, and Seoul
- Website at <http://www.icann.org/>

History of ICANN

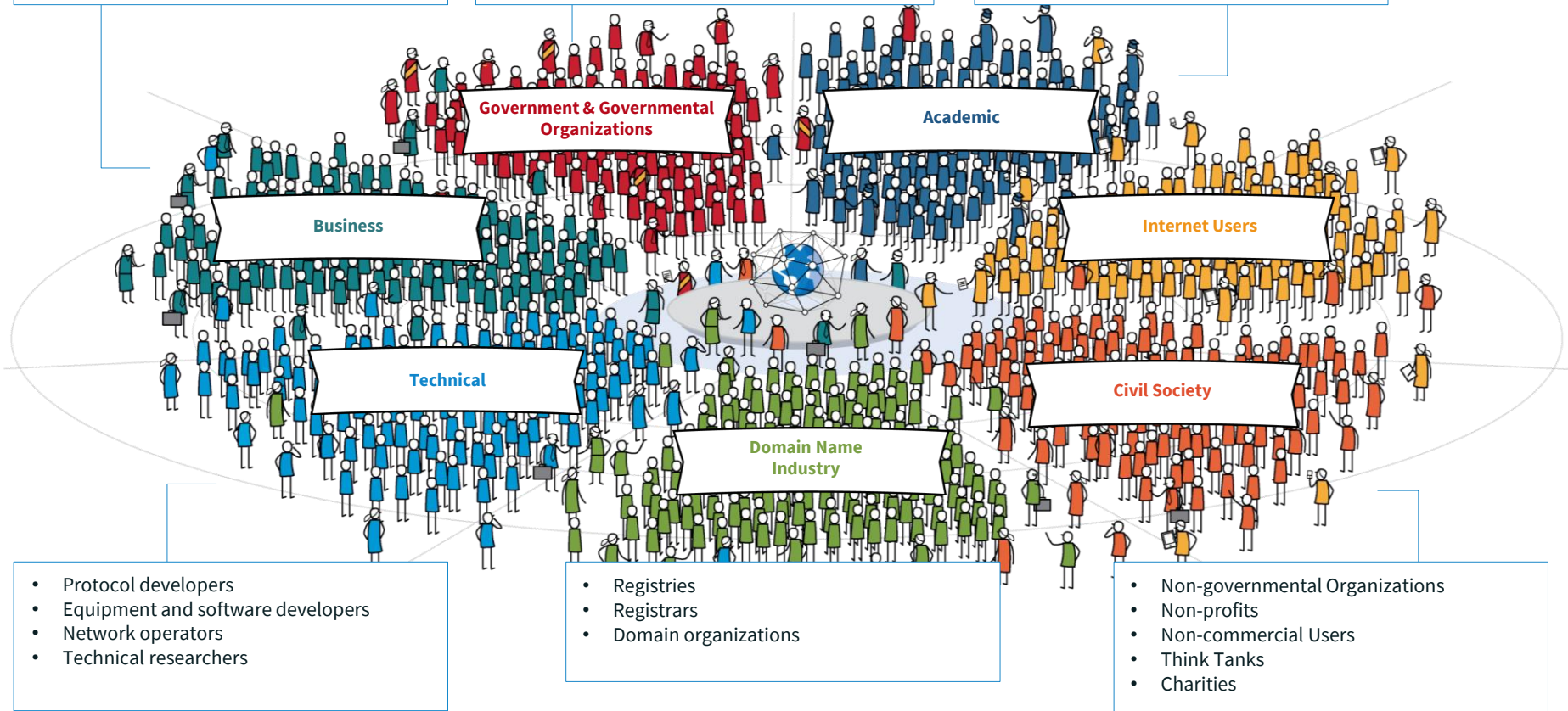
- A result of a consultation process during 1997-1998 (Green and White Papers). This was during the Clinton administration
- In November 1998, a Memorandum of Understanding (MoU) was signed between ICANN and the USA Department of Commerce
- In 2009, the *Joint Project Agreement (JPA)* was dissolved, and the *Affirmation of Commitment (AoC)* came into effect
- In 2014, the US Government announced its intention to relinquish the IANA Stewardship and hand it over to the multi-stakeholder community

The ICANN Community

- Private-sector companies
- Trade associations

- National governments
- Distinct economies recognized in international fora
- Multinational governmental and treaty organizations
- Public authorities (including UN agencies with a direct interest in global Internet Governance)

- Academic leaders
- Institutions of higher learning
- Professors
- Students



Supporting Organizations and Advisory Committees

- **ASO:** Address Supporting Organization
- **ccNSO:** Country Code Name Supporting Organization
- **GNSO:** Generic Name Supporting Organization
- **ALAC:** At-Large Advisory Committee
- **GAC:** Governmental Advisory Committee
- **RSSAC:** Root Server System Advisory Committee
- **SSAC:** Security and Stability Advisory Committee

Address Supporting Organization (ASO)

- Formed in October 1999
- One of the supporting organizations that was formed through community consensus
- Their purpose is to review and develop recommendations on Internet Protocol (IP) address policy
- More at <http://aso.icann.org/>

Country Code Name Supporting Organization

- Formed in 2003
- A body within the ICANN structure created for and by ccTLD managers
- Has to date more than 161 members; all being ccTLDs
- More at <http://ccnso.icann.org/>

Generic Name Supporting Organization (GNSO)

- Fashions policies for generic Top-Level Domains (e.g., .com, .org, .biz)
- Strives to keep gTLDs operating in a fair, orderly fashion across one global Internet, while promoting innovation and competition
- More at <http://gns0.icann.org/en/>

At-Large Advisory Committee (ALAC)

- Is a community of individual Internet users who participate in the policy development work of ICANN
- Views are represented via groups called “At-Large Structures (ALS)”
 - To-date, the at-large has 200 ALSs
 - Lebanese IT Association (LITA) is an ALS
- Website at <http://atlarge.icann.org/en/>

Governmental Advisory Committee (GAC)

- Its key role is to provide advice to ICANN on issues of public policy, and especially where there may be an interaction between ICANN's activities or policies and national laws or international agreements
- Usually meets three times a year in conjunction with ICANN meetings
- Has to-date 168 governments as members, and 35 observers
 - Lebanon is a member on the GAC
- More at <https://gacweb.icann.org/>

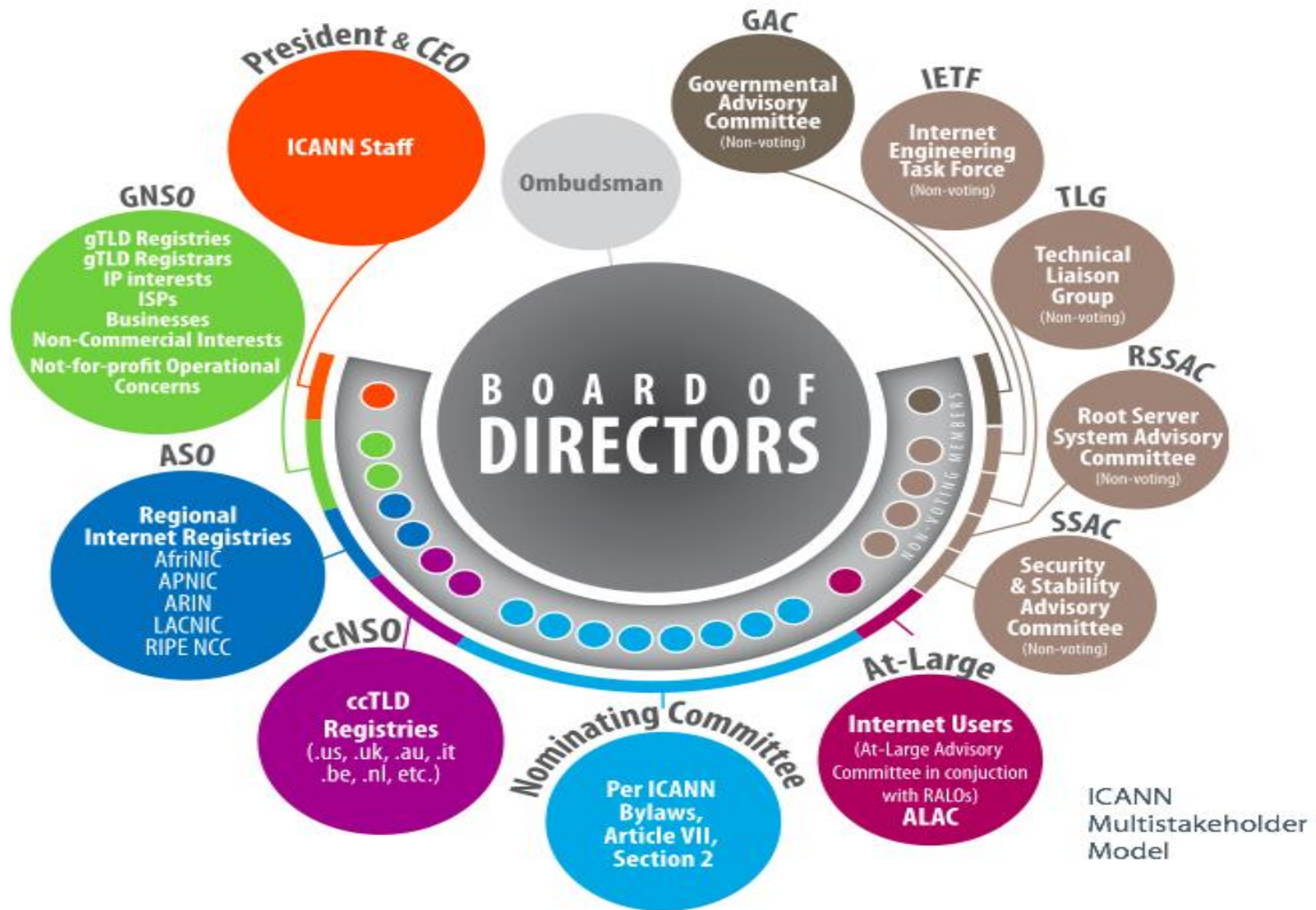
Root Server System Advisory Committee

- Is responsible for advising the ICANN community and Board on matters relating to the operation, administration, security, and integrity of the Internet's Root Server System
- The RSSAC Executive Committee holds periodic teleconferences and meets in person at IETF meetings and ICANN meetings
- More at <http://rssac.icann.org/>

Security and Stability Advisory Committee

- Advises the ICANN community and Board on matters relating to the security and integrity of the Internet's naming and address allocation systems
- They produce Reports, Advisories, and Comments on a range of topics
- More at <http://ssac.icann.org/>

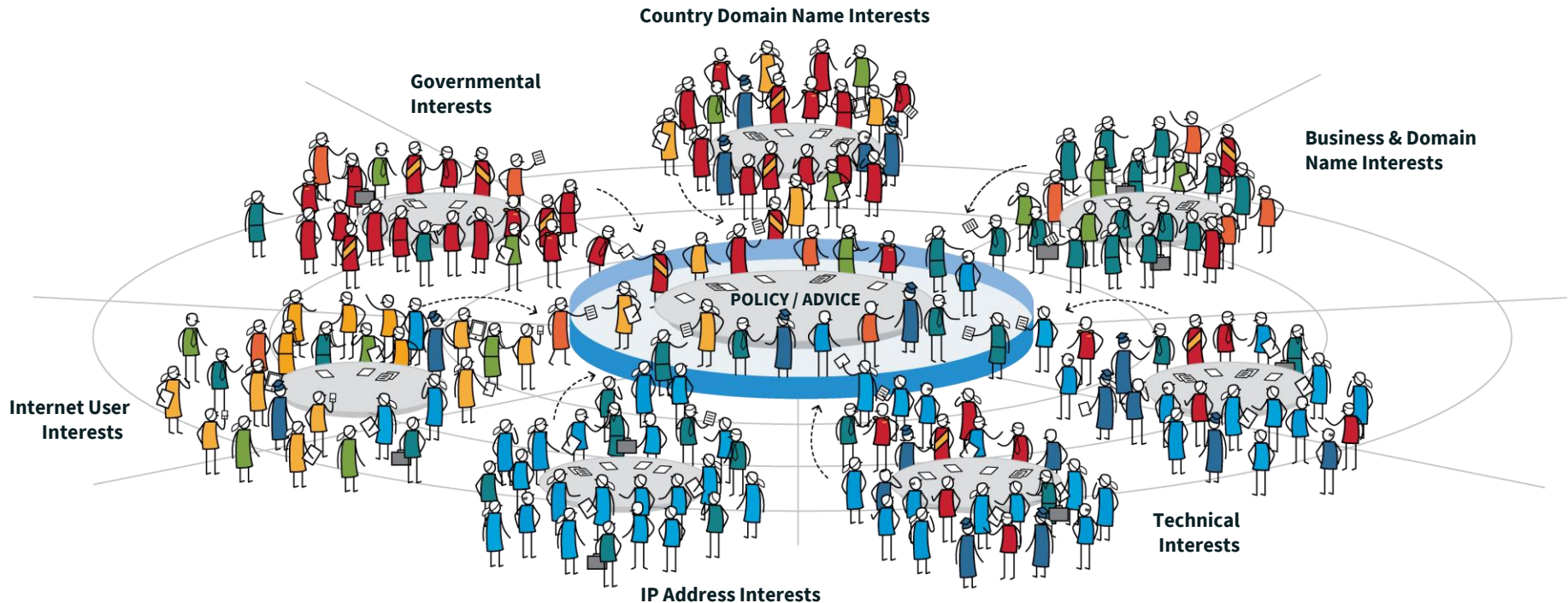
ICANN's Organizational Structure



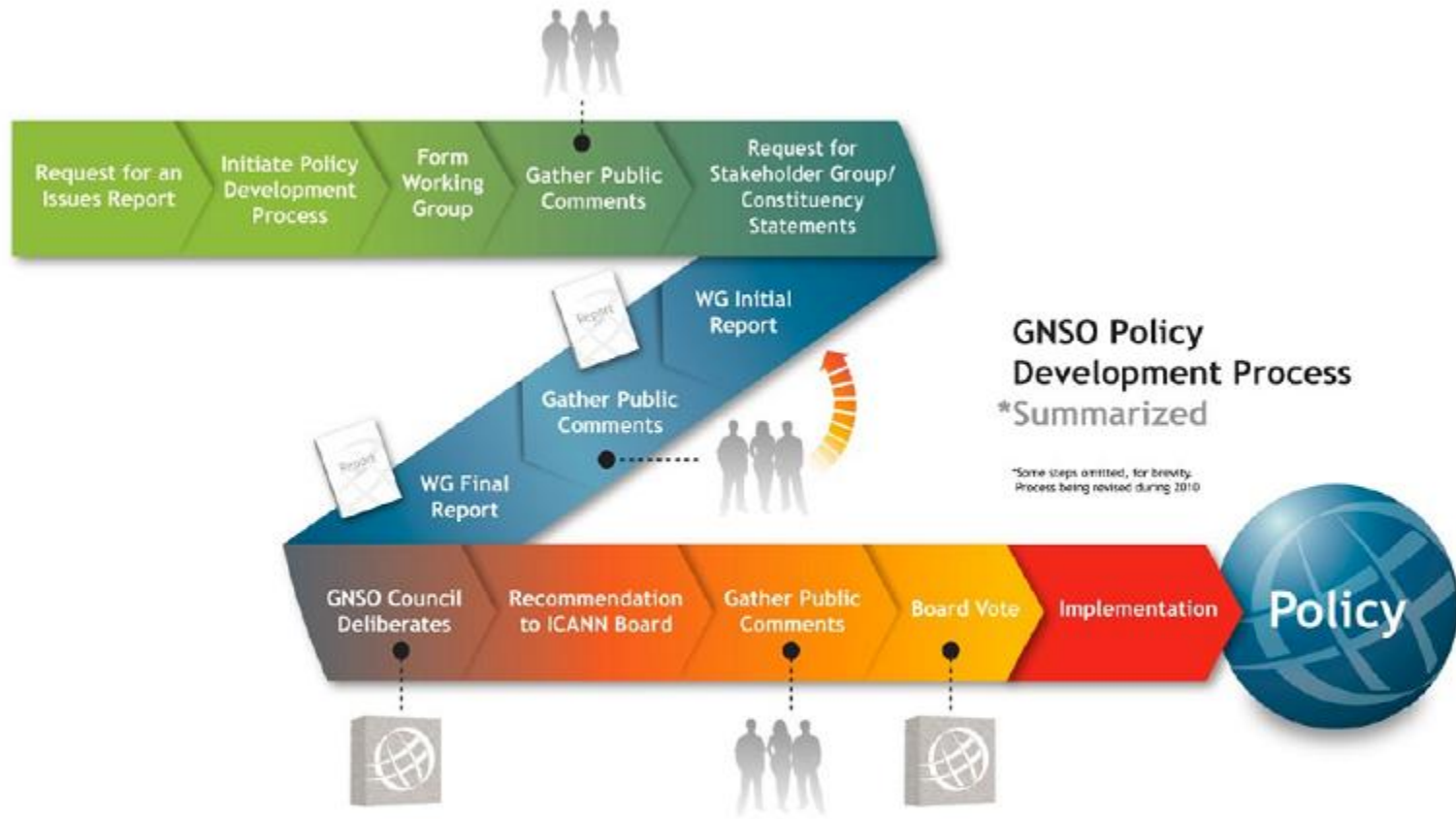
The ICANN Community in Action

The Bottom-Up Multistakeholder Model

The collective efforts of the ICANN community culminate in a common shared goal:
A single, interoperable Internet supported by stable, secure and resilient unique identifier systems



Policy Development at ICANN



Participation in ICANN

- Participation in ICANN is open to all who have an interest in ICANN's mission, and is free of charge
- Bottom-up policy-making and decision-making
- Public meetings held three times a year
 - ✓ Last meeting was in Helsinki, Finland (26-30 June 2016 | <https://meetings.icann.org/en/helsinki56>)
 - ✓ Next meeting will be in Hyderabad, India (3-9 November 2016 | <https://meetings.icann.org/en/hyderabad57>)

A Participant's Perspective



Fellowship Program

- The program aims at providing financial scholarships to individuals from developing countries to facilitate participation in ICANN meetings
- Fellowships Committee is responsible for qualifying and selecting applicants and is advising ICANN staff on how the program could be improved
- Funds 40-45 travelers for every ICANN meeting
- More can be found at <https://www.icann.org/resources/pages/fellowships-2012-02-25-en>

A Fellow's Perspective



NextGen@ICANN Program

- Helps gain a better understanding of how the Internet runs
- Covers many topics such as Internet Governance, ICANN, the IANA, Internet Technical standards, and others
- Funds 15-20 participants for every ICANN meeting
- More can be found at <https://www.icann.org/development-and-public-responsibility/nextgen>

- An online learning platform built for the global community
- Designed to be an effective way to maintain institutional knowledge, connect peers, and unlock a new level of understanding
- Like to take a course? Please visit <http://learn.icann.org/>
- You can suggest courses in the language of your preference

“What Does ICANN Do?” Infographic



ONE WORLD, ONE INTERNET

WHAT DOES ICANN DO?

To reach any device or thing connected to the Internet, you (or your search engine) must know their address – a name or a number. That address must be unique, so you can reliably find and connect to other devices, things, or information sources no matter where you are in the world. That's how the tens of thousands of physical networks appear and operate as 'One Internet'.

In concert with the technical operating community, ICANN maintains and administers the registries containing these unique addresses across the world ensuring the security, stability, and integrity of One Internet where we can reliably find each other.

Community-Driven Global Policy Development

To keep pace with dynamic technologies and rapid innovation, ICANN facilitates an open, consensus-driven, multistakeholder policy development process that is run from the bottom up.

Multistakeholder Model

Civil Society & Internet Users, the Private Sector, National & International Organizations, Governments, Research, Academic and Technical Communities are all represented.

Competition & Choice

From accrediting over 1000 registrars, to introducing new Top Level Domains (TLDs), ICANN works to expand consumer choice by fostering competition and innovation in the domain name marketplace.

WHICH FUNCTIONS DOES ICANN COORDINATE?

DNS

- Development of generic TLD policy
- Facilitation of country code TLD policy discussions
- Delegation of and changes to Top-level domains
- Management of the root's DNSSEC trust anchor
- Facilitating Root Server System discussions

Internet Numbers

- Approval of global number allocation policies
- Allocation of top-level blocks of Internet numbers
- Recognize Regional Internet Registries

Protocol Parameters

- Creation of and changes to protocol parameter registries
- Management of the Time Zone Database

Security & Stability

ICANN supports DNS security by supporting a secured DNS infrastructure (DNSSEC) and managing the top-level key of that infrastructure, requiring close coordination and collaboration with the community and volunteers around the world.

Interoperability

ICANN's work plays a role in helping the community to develop new technologies that flourish while maintaining interoperability across the global Internet. For example, the central publication point of unique protocol identifiers maintained by ICANN makes it easier for protocol developers to create protocols that allow communications using secure connections between users.

Contractual Compliance

ICANN maintains the contracts and enforces the consensus policies developed through the community-driven process embodied in those contracts. While we are not a regulator, we comply with the law and enforce community policies through contractual obligations.

HOW DO I PARTICIPATE?

- Sign up for updates at icann.org
- Join one of the many Public Comment Forums on ICANN's website
- Attend ICANN's Public Meetings in person or online to provide input at a Public Forum
- Join one of ICANN's Supporting Organizations or Advisory Committee
- Follow us on Twitter, Facebook, LinkedIn
- Subscribe to newsletters
- Participate in our fellows program
- Join a regional engagement group

WHO'S INVOLVED?

A number of groups, each of which represents a different interest and expertise on the Internet. All of them come together with the Board of Directors to shape policies and ICANN work.

Supporting Organizations

- Addressing
- Country Code Names
- Generic Names

Advisory Committees

- At-Large
- Governmental
- Root Server System
- Security & Stability

Technical Advisory Bodies

- Technical Experts Group
- Technical Liaisons from IETF, ETSI, W3C, ITU

Board of Directors

- 16 Community Appointed Board Members

Introduction to the IANA

A Bit of History

Prior to the establishment of ICANN, IANA was administrated primarily by Jon Postel at the Information Sciences Institute (ISI), at the University of Southern California (USC), under a contract USC/ISI had with the US Department of Defense, until ICANN was created to assume the responsibility under a contract with US Department of Commerce



What is IANA?

- Internet Assigned Numbers Authority
- Responsible for global Internet unique identifier systems
 - Domain names, number resources, and protocol assignments
- Founded in 1988 though its function has existed since 1972
- Website at <http://www.iana.org/>

What IANA Does Not Do?

- Does not set policy
- Does not decide what the two letter codes should be
 - ISO 3166-1 standard provides these codes
- Does not decide who runs a ccTLD
 - The local Internet community decides this

US Government and IANA

- ICANN performs the functions of IANA governed by a contract with the US Department of Commerce (DoC)
- US DoC authorizes all changes to the DNS root zone
 - IANA does all the processing, and when a change is ready, it is sent to the DoC as the final step before implementation
 - DoC directs Verisign to implement the change into the root
 - DoC notifies IANA when change is implemented

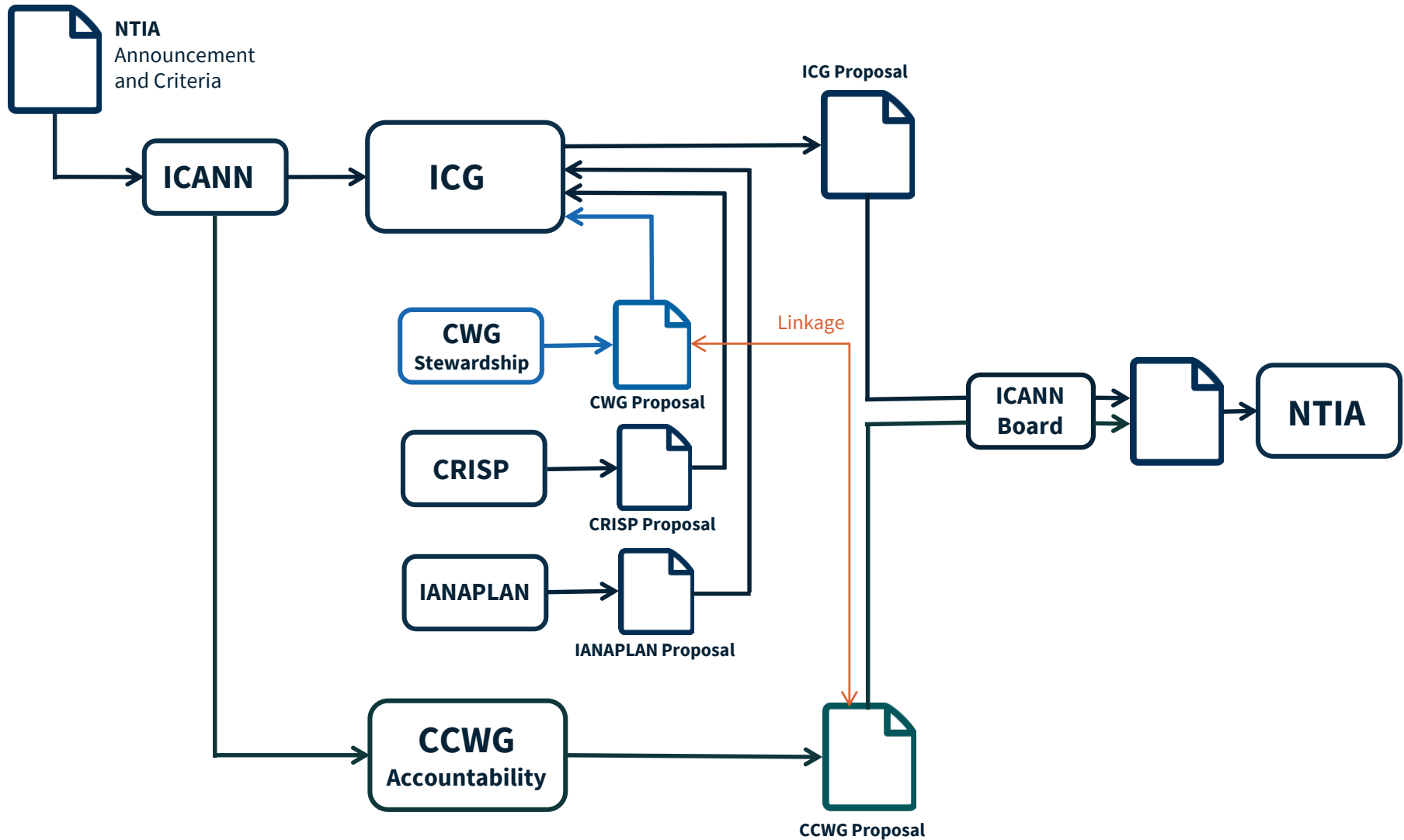
The U.S. Government's Announcement

- On 14 March 2014, the U.S. Government (USG) announced its intent to transition its stewardship of the IANA functions to the global multistakeholder community
- The USG always envisioned its role as transitional
- Two tracks were undertaken:
 - The IANA Stewardship Transition Track; and
 - Enhancing ICANN's Accountability Track.
- This work was fully undertaken by the ICANN Community, the I* Organizations, and anyone who has an interest in the Internet
- A proposal was submitted to the USG on 10 March 2016 during the ICANN 55 meeting in Marrakech

...cont. (The U.S. Government's Announcement)

- The proposal is currently being evaluated by the USG
- ICANN undertook amendments to its bylaws as this is one of the prerequisites for the USG to evaluate the proposal

Proposal Development Flow



Amount of Efforts Injected into the Proposal

MAJOR WORKING GROUP EFFORTS



800+

Working Hours in Meetings



33,100+

Total Mailing List Exchanges



600+

Total Calls/Meetings

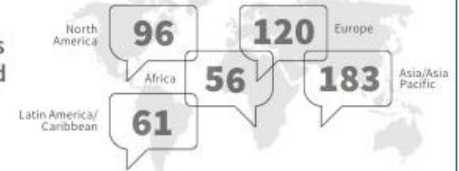
A SUPPORTING GLOBAL DISCUSSION

More than
1,100

* 590+ Webinars

Events around the world where the IANA transition was discussed, debated, organized and planned

Between March 2014 and March 2016



ICG + CCWG ACCOUNTABILITY

ICG

30
Members

Number Resources
CRISP Team
15
Members
= 3 Members x 5 RIRs

Protocol Parameters
IANAPLAN
2,250
Mailing List Exchanges

Domain Names
CWG-Stewardship
153
Members & Participants
152
Calls and Meetings

CCWG-Accountability

203
Total Participants

28
Members

175
Participants

111
Mailing List Observers

REGIONAL REPRESENTATION



ORGANIZATIONAL STAKEHOLDER REPRESENTATION



THE TWO PARALLEL PROCESSES

IANA Stewardship Transition

Enhancing ICANN Accountability for the Transition



2016 | ICANN | For more information, please visit www.icann.org/stewardship-accountability

Timeline and Next Steps



"The IANA Functions" Infographic



THE IANA FUNCTIONS

For more information, visit www.icann.org and follow @ICANN on Twitter.

The Internet depends on unique identifiers. When you want to visit a website, you type or paste the site's domain name into your browser, or click on an HTML link. That domain name is a "unique identifier."



That domain name is sent to a server which translates the name into a number – the Internet Protocol or IP Address – which the server uses to direct your request to the website's network location. This address is also a "unique identifier."



These "unique identifiers" are signed with a standard set of protocol parameters that ensure computers can talk to and understand each other.



The Internet Assigned Numbers Authority (IANA) functions, which are managed by ICANN, play a role in ensuring you get to where you want to go by coordinating unique identifiers. The three core IANA functions are described below.



The History

The IANA functions were developed during the administration of the ARPANET, a U.S.-government-funded Department of Defense network.

Originally, just one person - Jon Postel - performed the functions. Since then, the Internet has grown tremendously and the IANA functions are now managed by ICANN.



Stewardship in Transition

To support and enhance the multistakeholder model of Internet policymaking and governance, NTIA announced its intent to transition its stewardship of the IANA functions to the global multistakeholder community. To learn more about this transition, visit: <https://www.icann.org/stewardship>.

Acronyms

ICANN: Internet Corporation for Assigned Names and Numbers
IETF: Internet Engineering Task Force
NTIA: National Telecommunications and Information Administration
DNS: Domain Name System
DNSSEC: Domain Name System Security Extensions
AS number: Autonomous System Number
TLD: Top-Level Domain



NUMBER RESOURCES

Number resources refers to the global coordination of the Internet Protocol addressing systems, commonly known as IP Addresses. There are two types in active use:



192.0.2.53



2001:db8:582::ae33

Autonomous System (AS) numbers are another part of this function. AS numbers are used to identify the networks that manage their own routing by connecting to multiple networks managed by other organizations.

The allocation of IP addresses and AS numbers to Regional Internet Registries (RIRs) is performed by ICANN according to global policies. The five RIRs, each of which services a defined region, use open, multi-stakeholder processes to reach consensus on the policies that ICANN implements when allocating number resources to the RIRs.



PROTOCOL PARAMETERS

The Protocol Parameters management function involves maintaining registries for many of the codes and numbers used in Internet protocols. This is done in coordination with the IETF.

These protocol parameters define how things like pictures, audio, or video are attached to e-mails, or embedded in web pages. For example, the protocol parameter for MP4 audio looks like this:

(RFC 4837 published March 2006, RFC 6381 published August 2011, subtype last updated August 2011)

MIME media type name: audio

MIME subtype name: mp4

Required parameters: none

Optional parameters: none

These protocol parameters aren't just limited to audio or video. Almost every activity carried out in making the Internet work has protocol parameters involved.



DOMAIN NAMES

Maintaining the Root Zone Database is a key IANA function. It contains the authoritative record of all the Top Level Domains (TLDs - the ".org" part of "icann.org"). Part of that function is processing routine updates for TLD operators (such as changes to nameservers, DNSSEC DNS records, or contact information for the operators), as well as adding new TLDs into the root of the DNS.

Root DNS Key Signing Key (KSK) management is also part of that function. The KSK enables DNSSEC, which is important to the security of the Internet root zone file.



Root Zone Management Partners

ICANN performs the IANA functions on behalf of the global Internet community under contract with the United States' Department of Commerce (DoC). NTIA, an agency of the DoC, verifies that ICANN followed established policies and procedures in processing changes before authorizing Verisign, the Root Zone Maintainer, to make edits and publish the authoritative root zone file.

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Questions?!



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