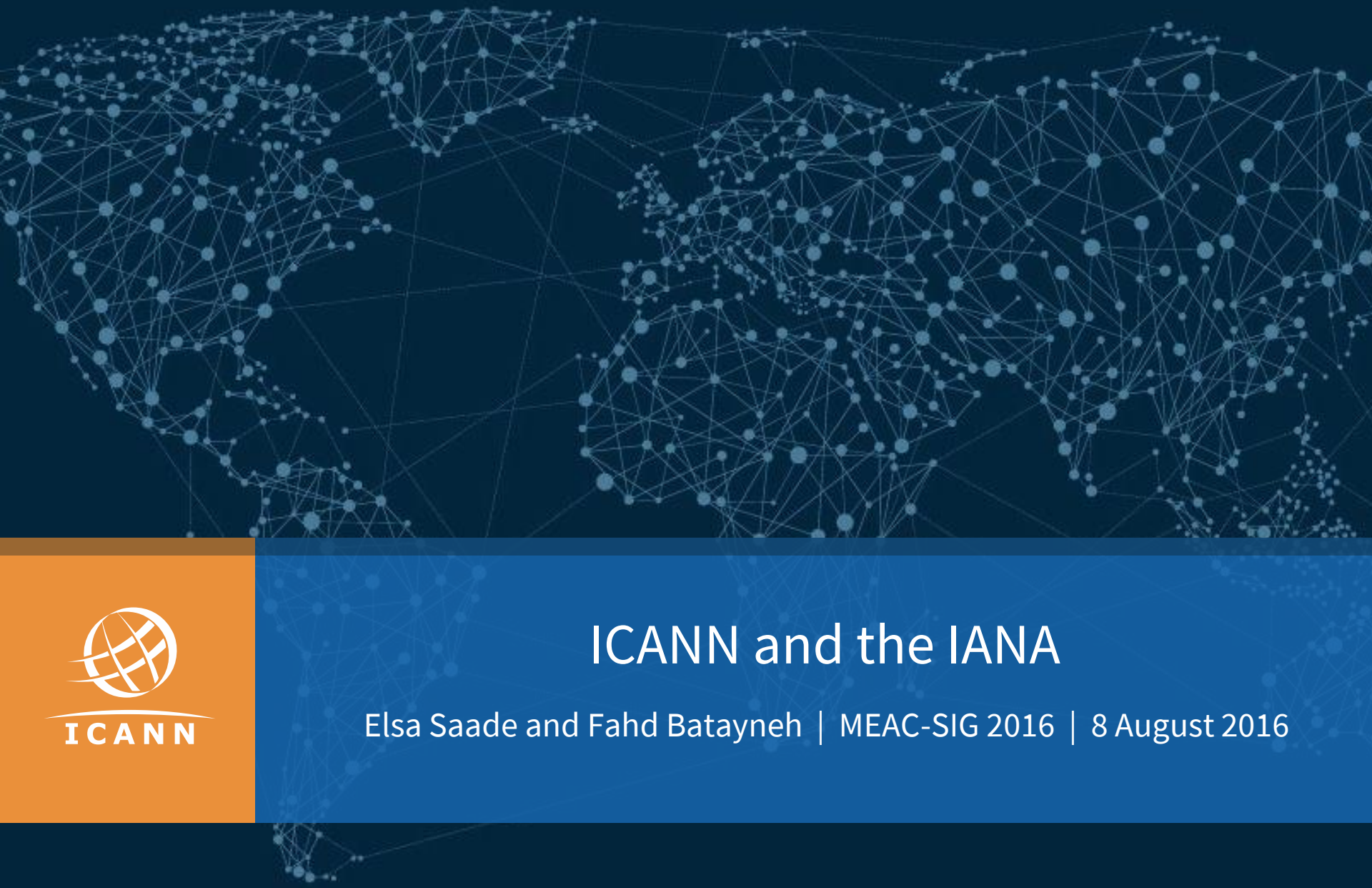


ICANN and the IANA

Elsa Saade and Fahd Batayneh | MEAC-SIG 2016 | 8 August 2016

Agenda

Introduction to ICANN

ICANN Video

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

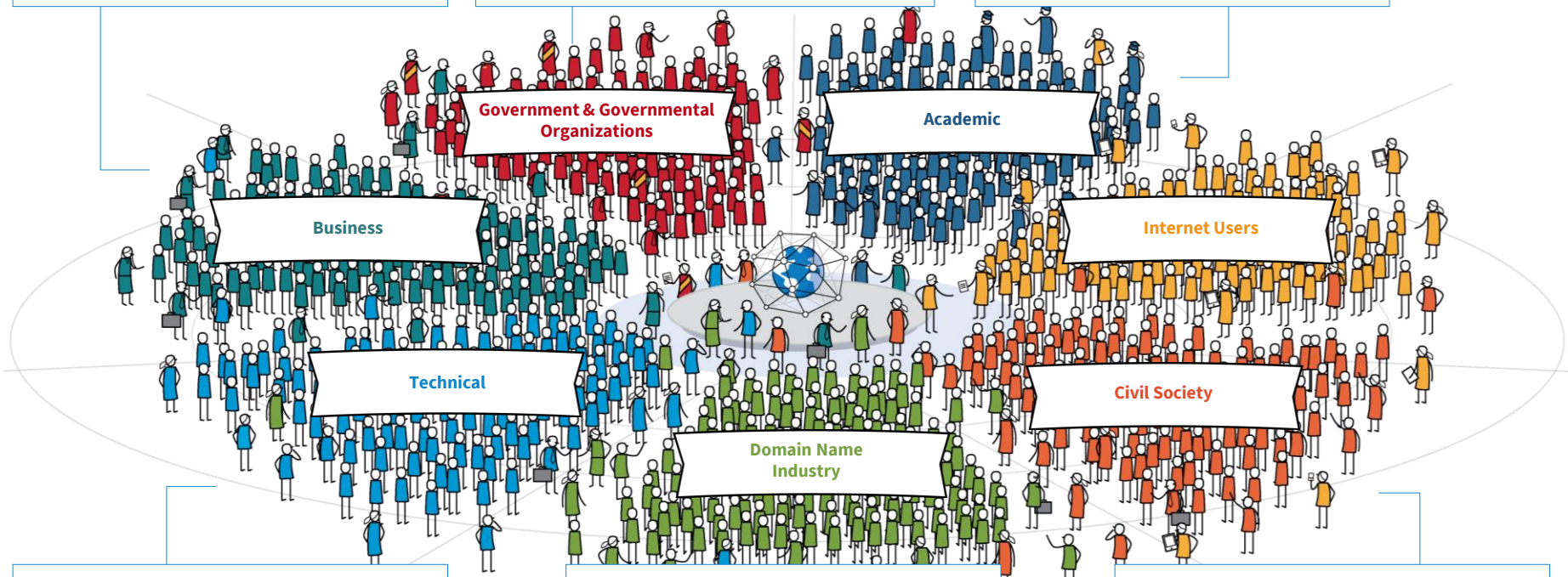
- A result of a consultation process during 1997-1998 (Green and White Papers). This was during the Clinton administration
- In November 1998, a Memorandum of Understanding (MoU) was signed between ICANN and the USA Department of Commerce
- In 2009, the *Joint Project Agreement (JPA)* was dissolved, 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

- 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)

- Private-sector companies
- Trade associations

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



- Protocol developers
- Equipment and software developers
- Network operators
- Technical researchers

- Registries
- Registrars
- Domain organizations

- Non-governmental Organizations
- Non-profits
- Non-commercial Users
- Think Tanks
- Charities

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://gnso.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/

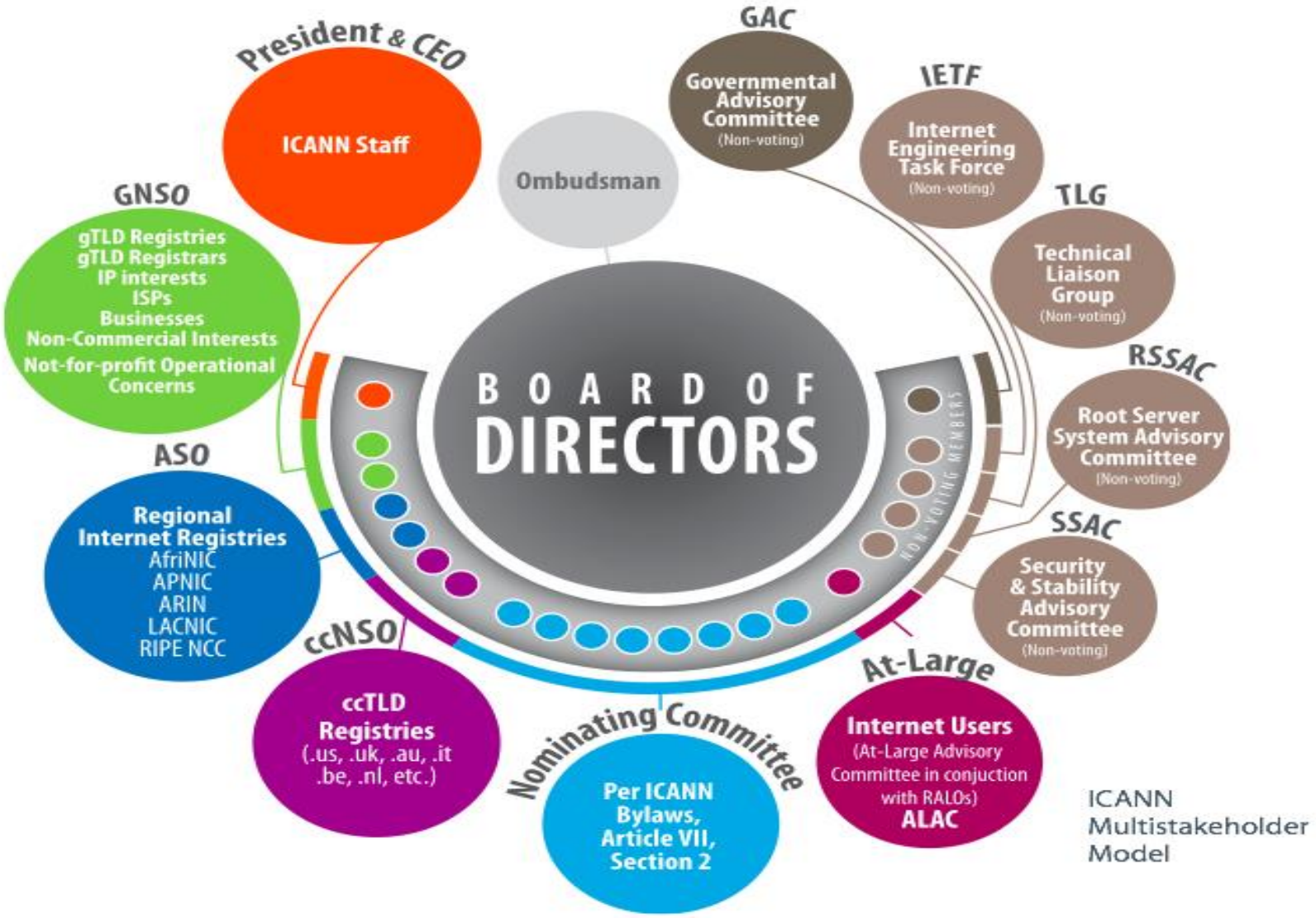
Root Server System Advisory Committee

- 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



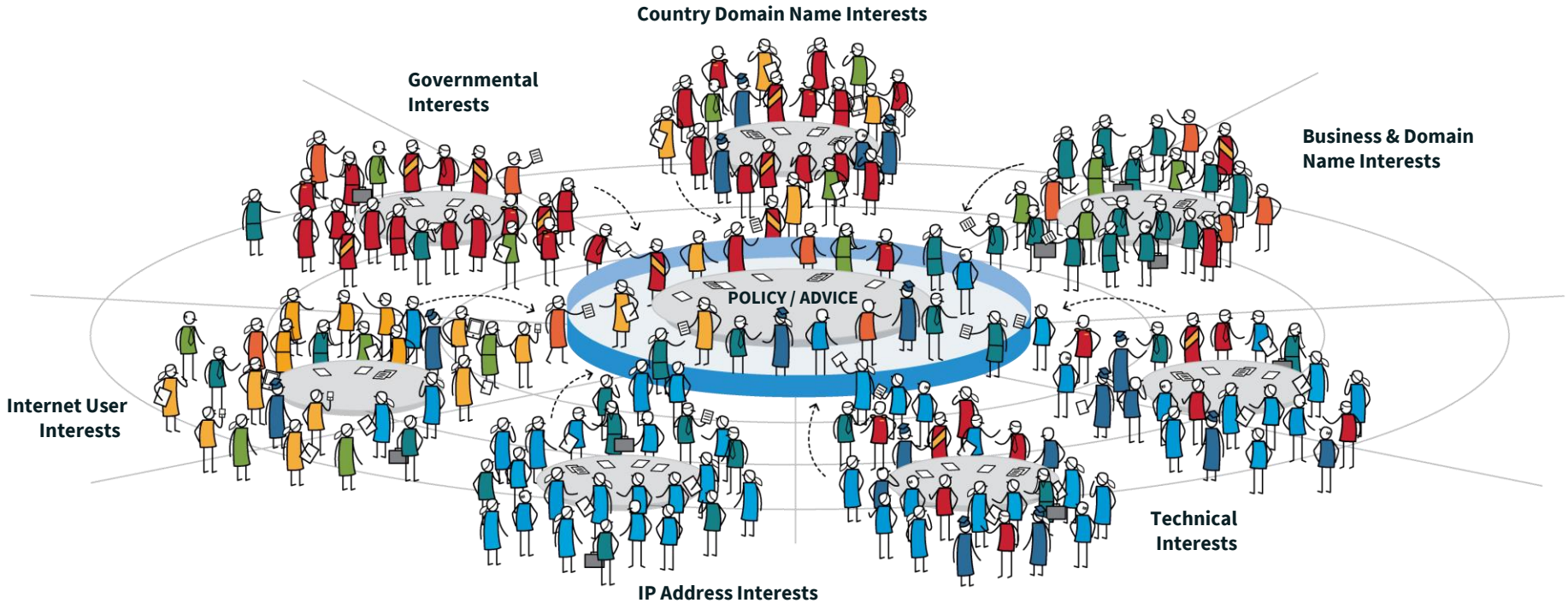
ICANN Multistakeholder Model

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

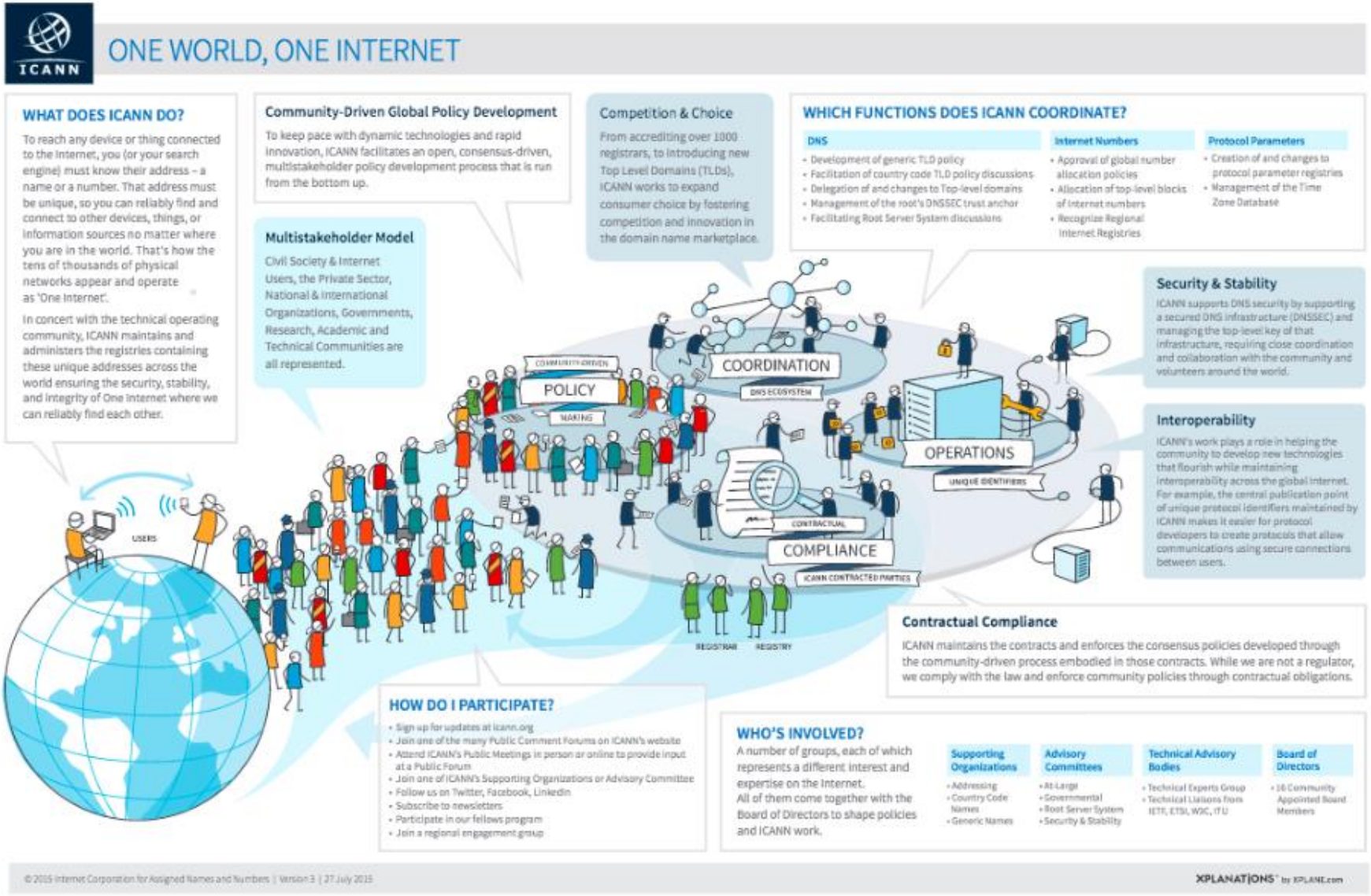
NextGen@ICANN Program

- 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

ICANN Learn

- 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



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

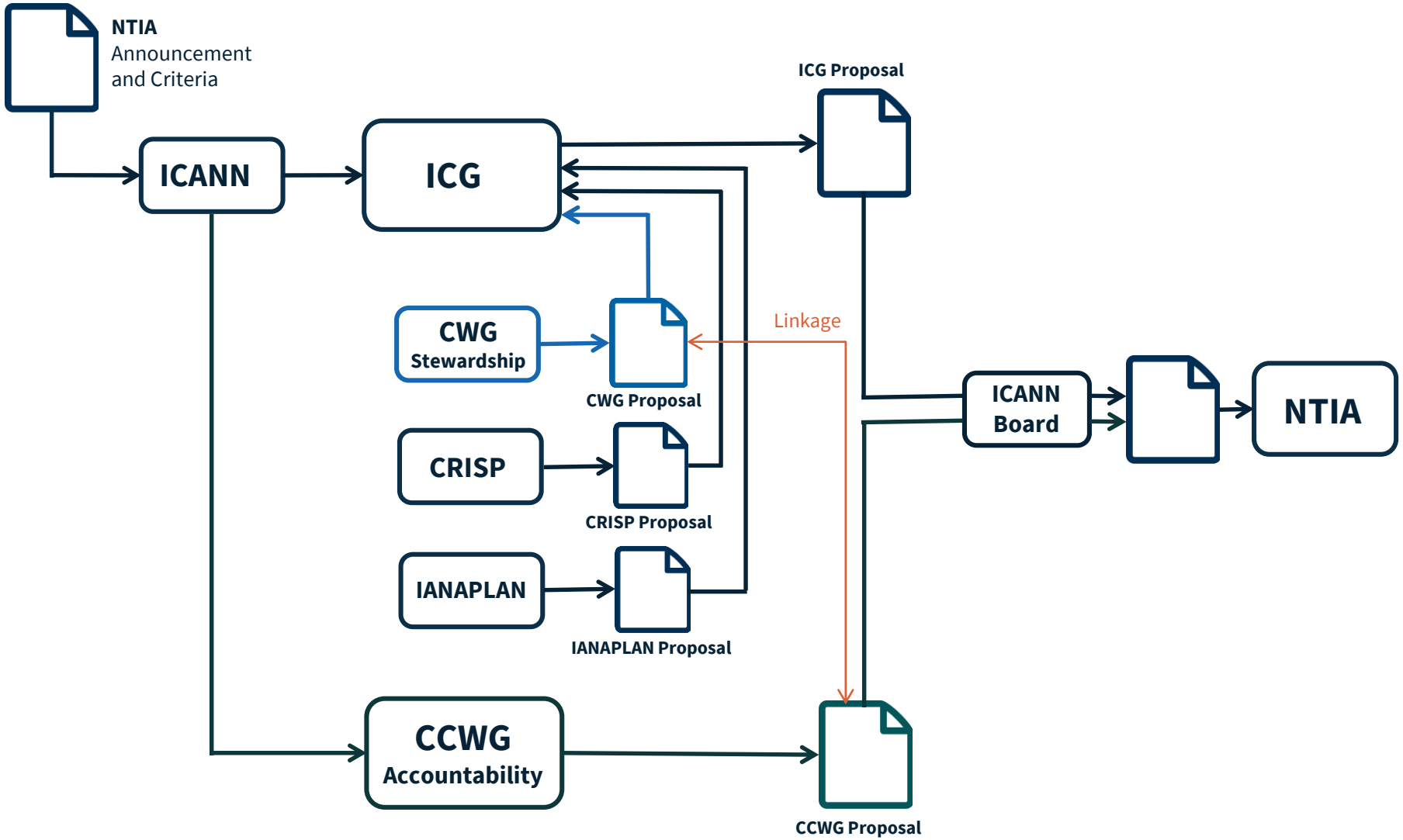
The U.S. Government's Announcement

- 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

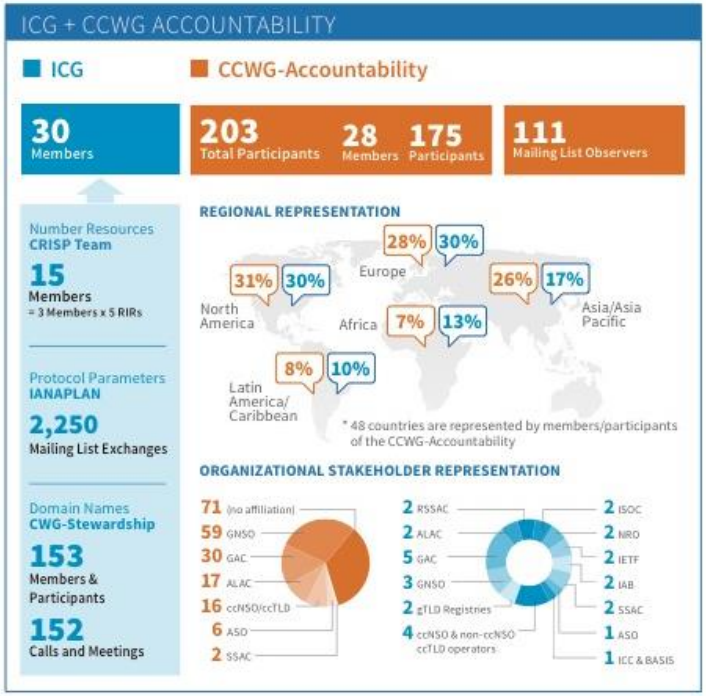
…cont. (The U.S. Government's Announcement)

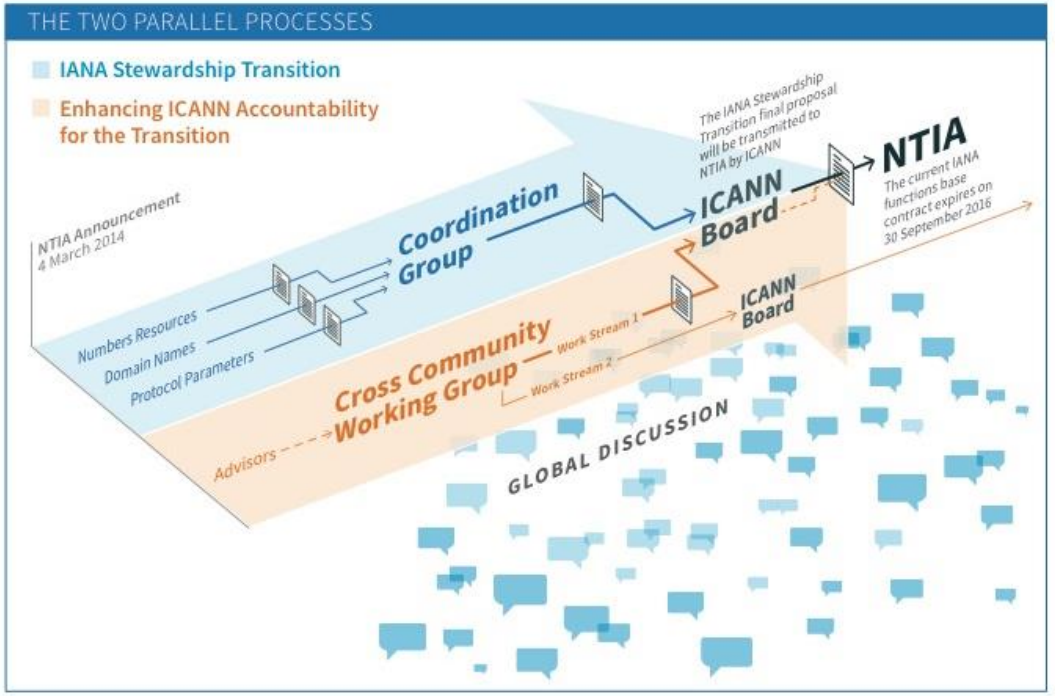
- The proposal is currently being evaluated by the USG
- ICANN undertook amendments to its bylaws as this is one of the prerequisites for the USG to evaluate the proposal

Proposal Development Flow



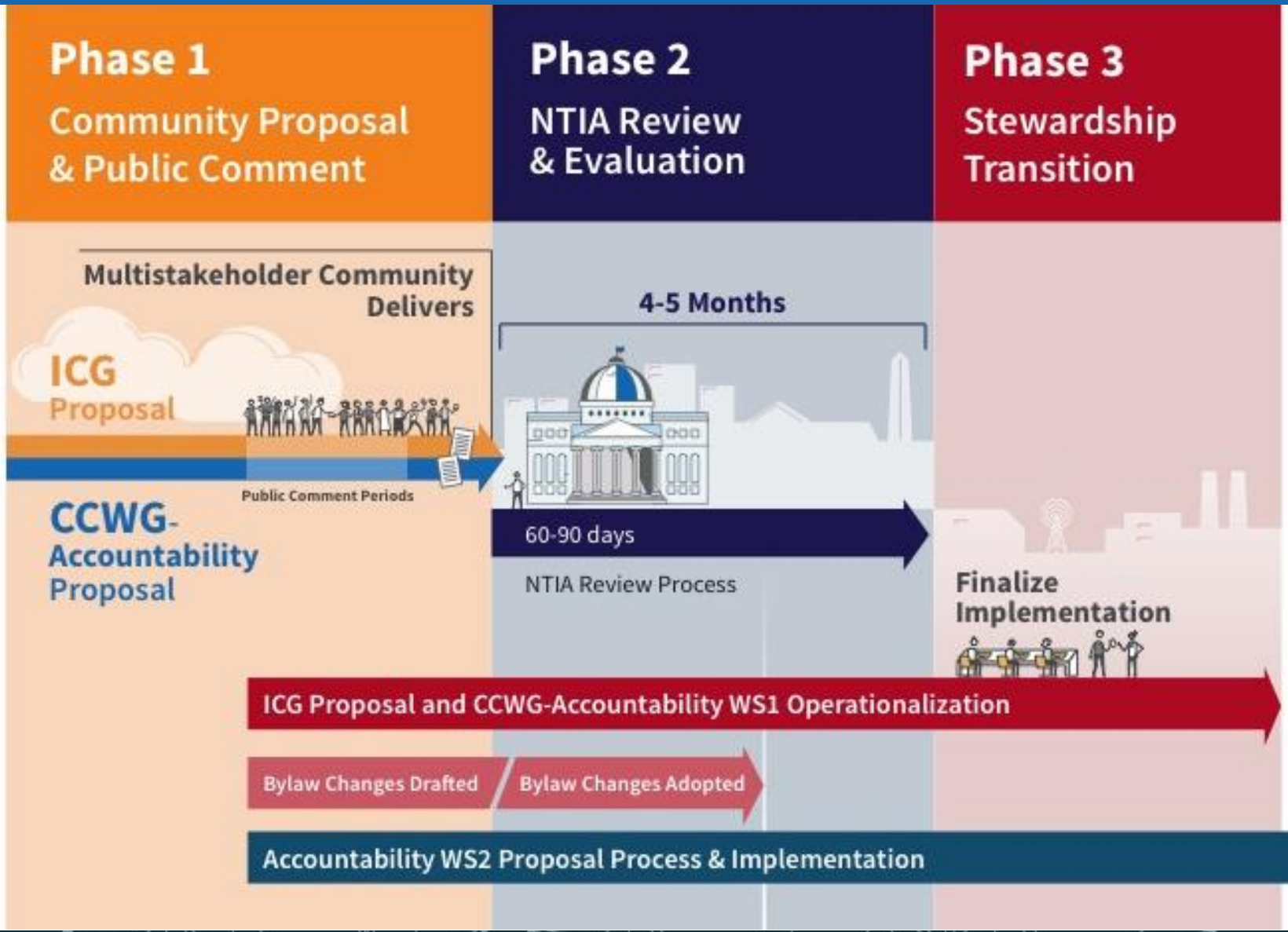
Amount of Efforts Injected into the Proposal





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

IPv4 192.0.2.53

IPv6 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 4337 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.

Version 2.0 - August 11, 2014

Questions?!

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