



ICANN, the IANA, and Regional Initiatives

Naveed Bin Rais and Fahd Batayneh | pkSIG 2015 | October 6, 2015

Agenda

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Regional Initiatives

A world map where the continents are defined by a complex network of white nodes and connecting lines, set against a solid teal background. The nodes vary in size and are densely packed in some areas, creating a digital or network-like appearance of the globe.

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/>

The Formation of ICANN

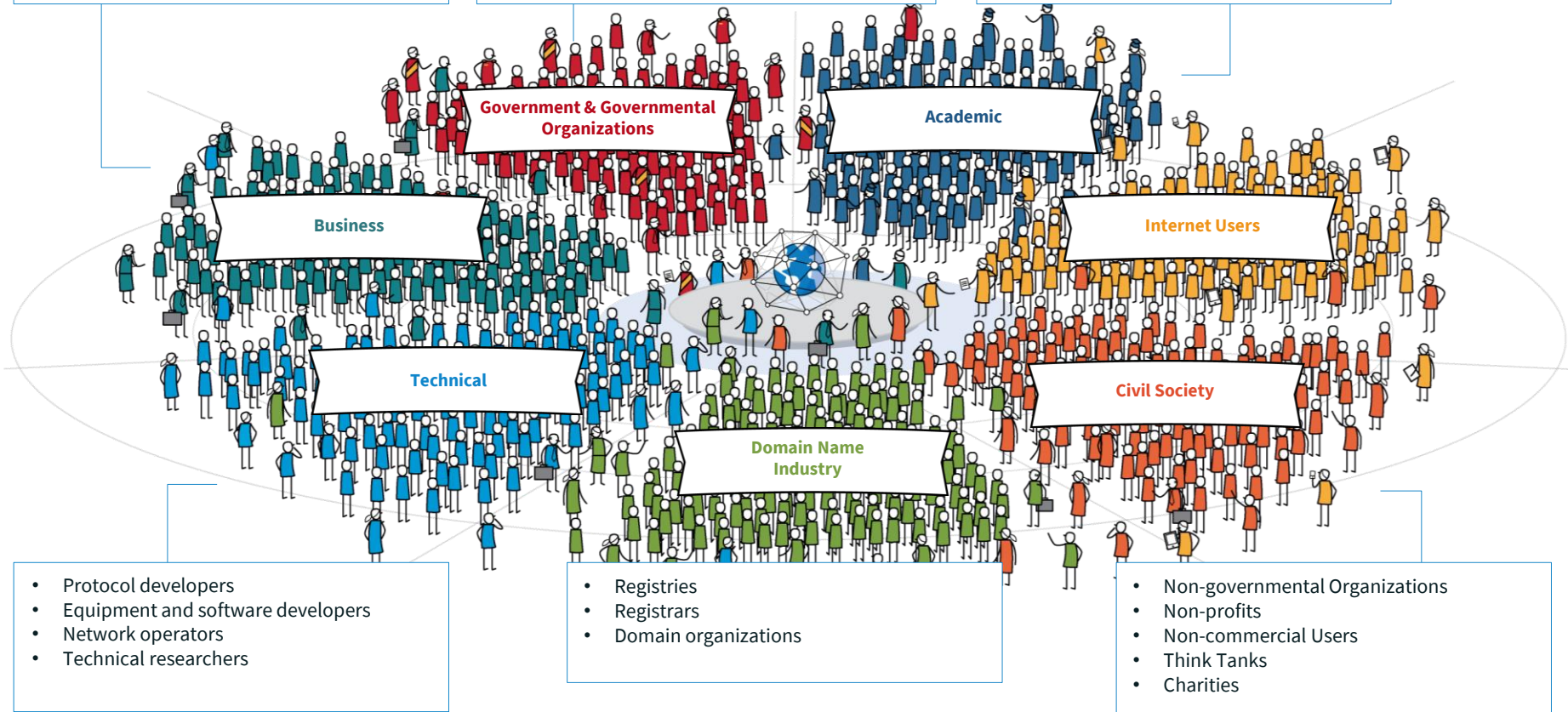
- In November 1998, a Memorandum of Understanding (MoU) was signed between ICANN and the USA Department of Commerce where ICANN would:
 1. Establish policy for and direction of the allocation of IP number blocks;
 2. Oversight of the operation of the authoritative root server system;
 3. Oversight of the policy for determining the circumstances under which new top level domains would be added to the root system;
 4. Coordination of the assignment of other Internet technical parameters as needed to maintain universal connectivity on the Internet; and
 5. Other activities necessary to coordinate the specified DNS management functions, as agreed by the Parties

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



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 157 members; all being ccTLDs
- More at <http://ccnso.icann.org/>

Generic Name Supporting Organization (GNSO)

- Enforces 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, 193 active ALSs are part of the At-Large
 - ISOC Islamabad Chapter is an ICANN ALS
- Website at <http://atlarge.icann.org/en/>

ISOC Islamabad Chapter as an ALS

- Established in June 2013
- Joined ICANN as At-Large in January 2014
- Participated in ATLAS II (At-Large Summit) at 50th ICANN meeting held in London
- Chapter is involved in a number of activities including
 - Capacity building and training of IPv6 and DNSSEC
 - Cyber child online protection
 - Membership outreach
- Organized Asia Internet Symposium held in May 2014

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 154 governments as members, and 34 observers
- More at <https://gacweb.icann.org/>

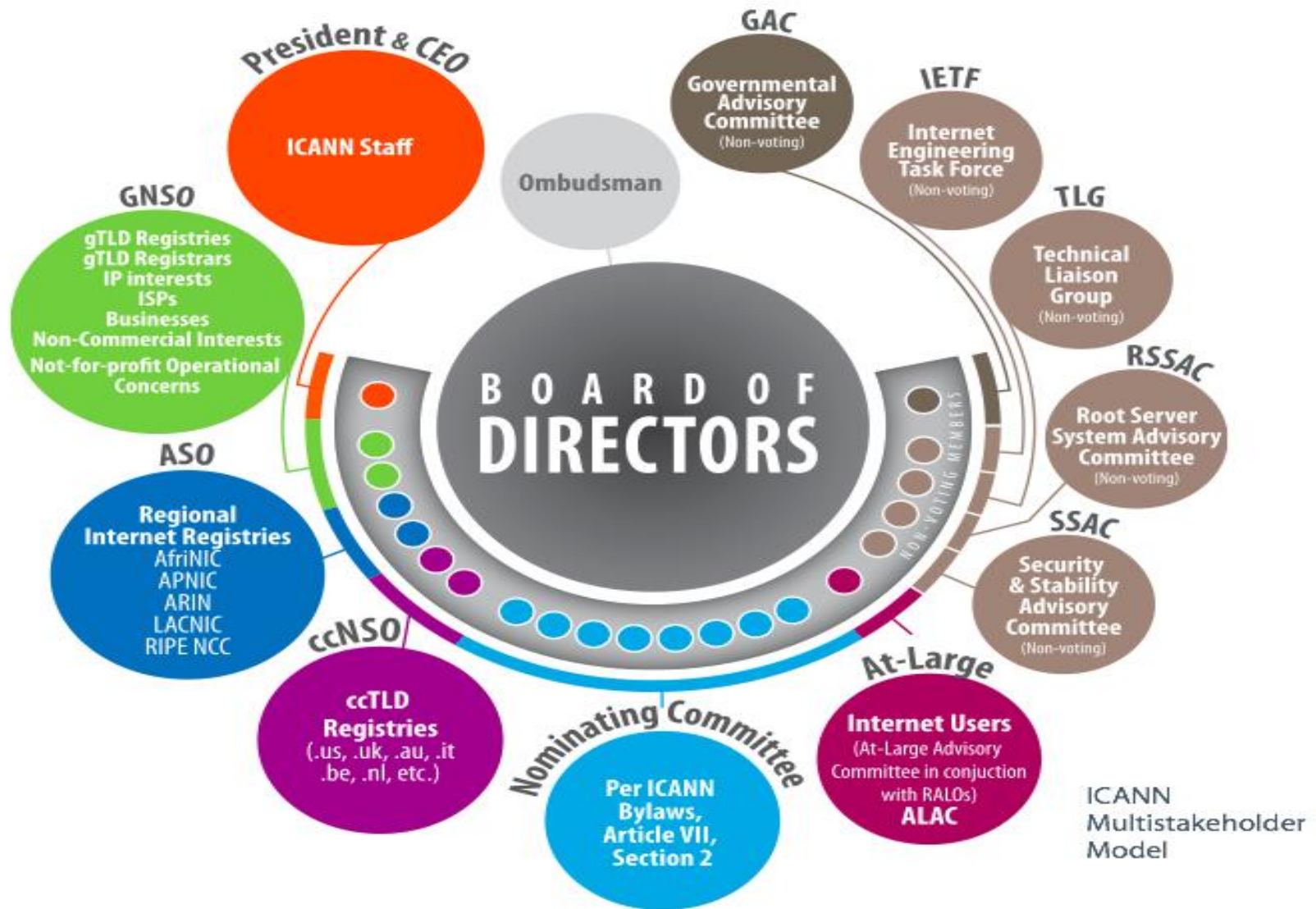
Root Server System Advisory Committee

- 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/>

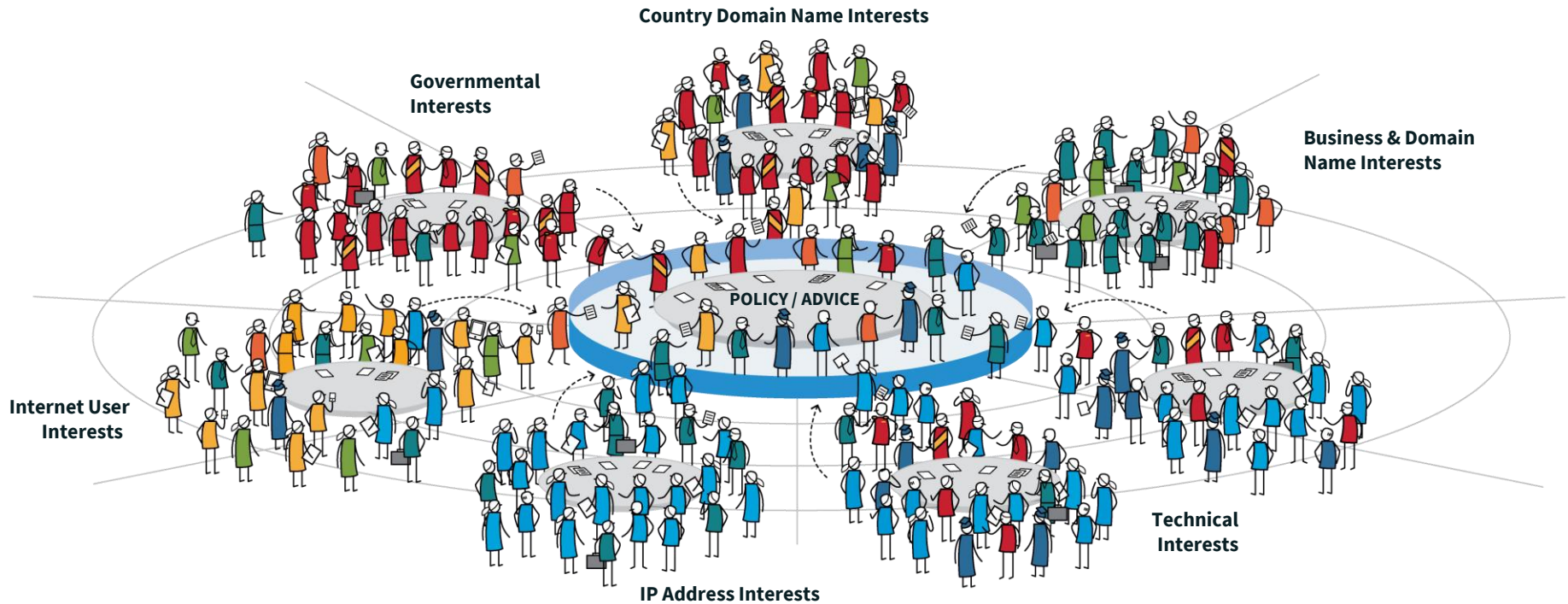
ICANN's Organizational Structure



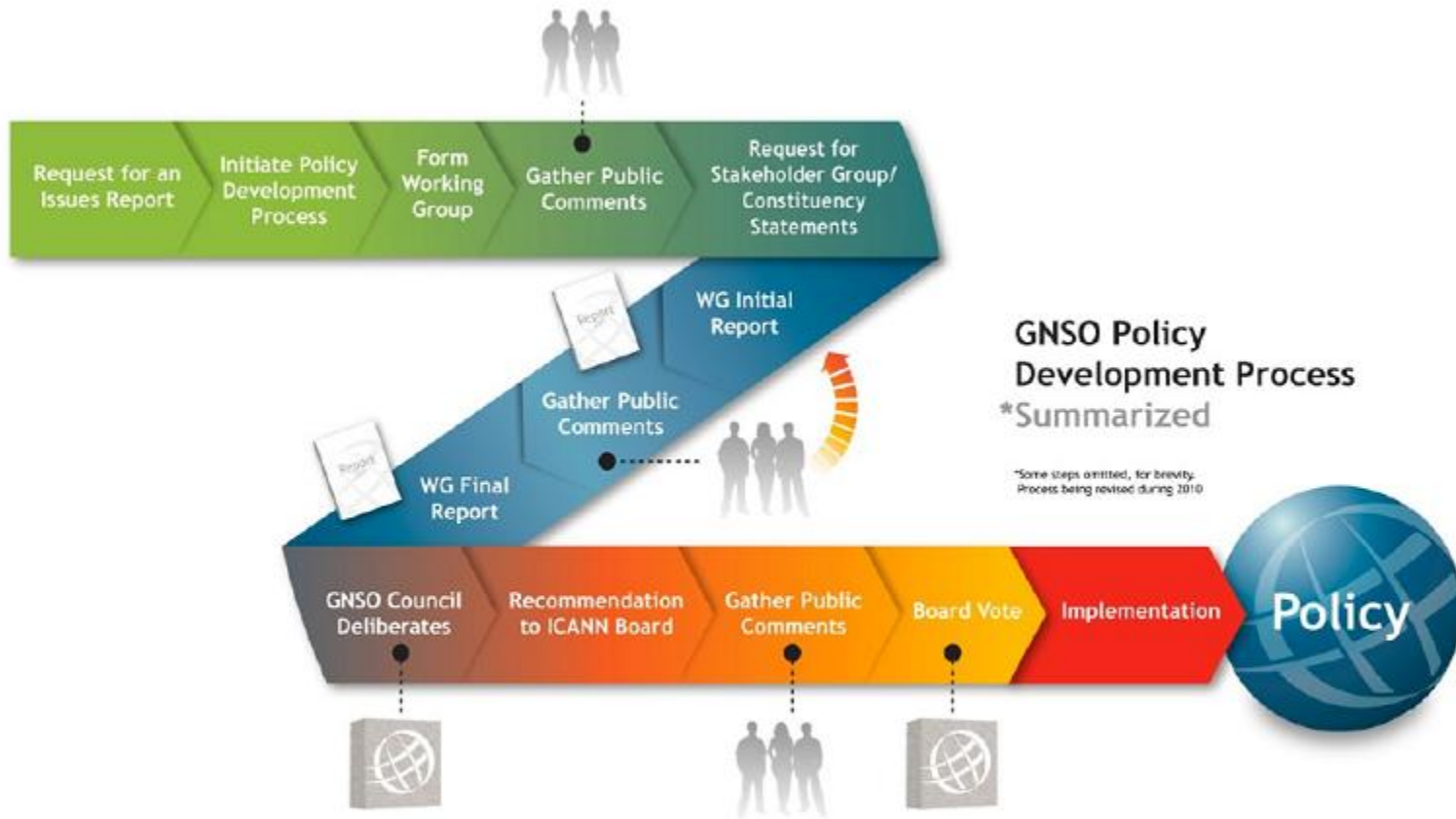
The ICANN Community in Action

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 Buenos Aires (21-25 June 2015 | <http://buenosaires53.icann.org/en/>)
 - ✓ Next meeting will be in Dublin, Ireland (18-22 October 2015 | <https://meetings.icann.org/en/dublin54>)

A Participant's Perspective

- ICANN has a bottom-up multi-stakeholder model
 - Policy development process involves all stakeholders
 - Transparent and open procedures
- Any one can participate, contribute and is sure to be heard by the community
 - The Public forum and the board meeting
- A welcoming environment
- Almost all sessions are open to public
- A lot of acronyms to cope for a new bee 😊

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>

**Fellowship round for ICANN 55 in Marrakech, Morocco now open until
October 16**

A Fellow's Perspective

- ICANN Fellowship is very prestigious
 - A life changing experience
- Provides an opportunity for people from developing countries to be able to contribute in the processes of ICANN
- An guided and supervised way to make yourself integrated and feel comfortable into the complex world of ICANN
- Provides direct interaction with community leaders
 - An ICANN meeting hosts at least 2000 participants
- Fellows have been great contributors
 - Many community leaders and ICANN staff have been ICANN fellow

A Fellow's Perspective: Fellowship Means...

Learning



Engagement



Information



Enjoyment



A Fellow's Perspective: Fellowship Means...

Bonding



Opportunity



Networking



Friendship



A Fellow's Perspective: Personal Experience

- ICANN fellowship has added a new dimension to life
 - An unmatched exposure to a whole world of community leaders and professionals
- Attended 3 ICANN meetings as a fellow since June 2014
 - 4th will be ICANN 54 in Dublin (18-22 October, 2015)
- Member of NCUC/NCSG/gNSO
- Working with SSR team
- DNS-EC training on DNSSEC in Dubai (April 2015)
- ISOC fellowship for IETF (March 2015)
- Chapter leader of ISOC Islamabad chapter
- Panelist of Workshop on Internet Governance by MoITT
- ICANN Fellowship mentor and coach for new ICANN fellows

- 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/>

“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 Forum (ITF, ETSI, W3C, IETF)

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
 - The first reference to the name “IANA” in the RFC series was in RFC 1060 published in 1990, but the function and the term was established well before that
 - RFC 1060 lists a series of earlier editions of itself starting with RFC 349 which was published in 1972
- Website at <http://www.iana.org/>

What IANA Does Not Do?

- Does not set policy
 - Follow precedent where possible
 - Encourage review of its operations by the community
- 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
 - IANA performs due-diligence to ensure requests accord with local Internet community view

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;
- As the first step, it asked ICANN to convene global stakeholders to develop a proposal to transition the current role played by the USG;
- ICANN was asked to serve as a convener based on its role as the IANA functions administrator (since 1998) and the global coordinator for the Internet's Domain Name System (DNS).
- The multistakeholder community has set the policies implemented by ICANN for more than 15 years.

Why Now?

- The USG always envisioned its role as transitional;
- Transitioning the USG out of its current role marks the final phase of the privatization of the DNS as outlined by the USG in 1997;
- The decision further supports and enhances the multistakeholder model of Internet policymaking and governance.

Transition Proposal's Guiding Principles

NTIA has communicated to ICANN that the transition proposal must have broad community support and address the following four principles:

- Support and enhance the multistakeholder model;
- Maintain the security, stability, and resiliency of the Internet DNS;
- Meet the needs and expectation of the global customers and partners of the IANA services; and
- Maintain the openness of the Internet.

NTIA also specified that it will not accept a proposal that replaces the NTIA role with a government-led or an intergovernmental organization solution.

“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:

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



The background of the slide is a solid orange color. Overlaid on this is a stylized world map. The map is formed by a network of small white dots connected by thin white lines, creating a mesh-like structure that outlines the continents. The text "Regional Initiatives" is centered on the map in a white, bold, sans-serif font.

Regional Initiatives

ICANN Staff in the MEAC Region

Baher Esmat

VP, Global Stakeholder Engagement

Cairo, Egypt

baher.esmat@icann.org



Fahd Batayneh

Manager, Global Stakeholder Engagement

Amman, Jordan

fahd.batayneh@icann.org



What is ICANN doing for the MEAC Region?

- Middle East Strategy Working Group (MESWG)
 - Formed in late 2012 under ICANN's Coordination
 - Covers the 22 Arab states, Iran, Afghanistan, and Pakistan
 - An ad-hoc working group consisting of 19 experts from 11 countries of the region. 3 members from Pakistan.
 - A 3-year strategy with annual Implementation Plans
- ...
- And lots of other activities as will be explained shortly

Strategic Goals for ICANN's Engagement

- Foster two-way engagement between ICANN and the broader Internet community in the region;
- Build strong and competitive domain name industry in the region; and
- Promote multi-stakeholder Internet governance mechanisms in the region

Strategic Areas of Work

- Working group has defined three strategic areas to work on:
 - DNS Security and Stability
 - Domain Name Industry
 - Internet Governance Ecosystem
- More at <http://bit.ly/1zMpW0X>

Key Outcomes from the Strategy

- Task Force on Arabic Script IDNs (TF-AIDN)
- Middle East DNS Forum
- Middle East and Adjoining Countries School on IG (MEAC-SIG)
- Task Force on Capacity Building and Awareness (TF-CBA)
- The DNS Entrepreneurship Center (DNS-EC)
- DNS Study for the Middle East

Task Force on Arabic Script IDNs (TF-AIDN)

- Looking into use of IDNs in Arabic script:
 - Arabic Script Label Generation Ruleset (LGR) for the Root Zone
 - Second level LGRs for the Arabic script
 - Arabic script Internationalized Registration Data Protocol and Practice
 - Universal acceptability of Arabic script IDNs and variants
 - Technical challenges around registration of Arabic script IDNs and variants
 - Operational software for Arabic script IDN registry and registrar operations
 - DNS security matters specifically related to Arabic script IDNs and variants
 - Technical training material around Arabic script IDNs

... cont. (TF-AIDN)

- Membership open to anyone interested
- Work published to the public on the wiki space at <http://bit.ly/1tiN7MM>

Want to join the TF-AIDN? Please send your Resume/CV and Statement of Interest
(Sol) to meswg@icann.org

2nd ME DNS Forum in Jordan

- Held in Amman, Jordan during March 9-10, 2015
- Agenda developed by a Program Committee of 6 members
- Attracted 80 physical and remote attendees from various stakeholder groups
- Website at <http://amman2015.mednsf.org/en/>

2nd MEAC-SIG in Tunis

- Held in Tunis during March 25-29, 2015
- Agenda covered topics such as Introduction to IG, History, IG Stakeholders, Introduction to the I* Organizations, CIR, Internet Public Policy, Cybersecurity, Privacy, Access, Infrastructure, and others.
- 31 attendees from 13 different countries
- Positive feedback provided after the school, and students are in touch via a dedicated mailing list
- Agenda and other material at <http://bit.ly/1BSJgjY>

DNS Entrepreneurship Center (DNS-EC)

- Its goal is to develop the domain name industry ecosystem in Africa and the Middle East
- Its mission is to develop a robust and healthy domain name ecosystem in Africa and the Middle East
- Established in Cairo, Egypt in partnership between ICANN and Egypt's Regulator (NTRA)

DNS-EC Scope

Phase 1
Foundation

July 2014 – June 2015

Phase 1

Develop Capacities necessary for the establishment of the DNS-EC

Programs cover various Technical, Policy, and Business aspects

Phase 2
Launch

July 2015 – June 2017

Phase 2

Start up DNS-EC; develop business plan and seek partnership

Start offering training and consultation services

Phase 3
Operation

July 2017 and Beyond

Phase 3

Lend expertise and knowledge across Africa and the Middle East

Possibility of assuming a DNS operational role

DNS-EC Training Tracks

Technical Track

- Registry operations
- Secure registry operations / DNSSEC
- Virtualized training platforms

Business Track

- Registry / Registrar models
- Business models and marketing strategies
- Registration policies
- Dispute resolution

A Trainer's Perspective

- DNS-EC organized a training for potential trainers in cooperation with ICANN and NSRC for Middle East and Africa Region
 - Held in April 2015
 - Participated as one of the potential trainers for the Middle East and North Africa region
- Objective is to help ICANN organize regional trainings on DNSSEC for capacity building and awareness
- Training included working on presentation skills, virtual machines setup, and DNS and DNSSEC installation and configuration
- Currently working with ICANN to develop a local training toolkit and equipment to organize local workshops

Middle East DNS Study

- The goal of this study is to define the weak components in the industry in the region, and come out with a set of recommendations in aims of improving the industry and getting it closer to the potential it can reach to
- Is expected to consist of facts, analysis of data, and conclusions and recommendations
- Expected to be published in November 2015

Engagement with Stakeholders

- Attend events where ICANN can benefit in engaging with participants
- Visit academic institutes and educate them on IG
- Visit SME funding entities, angel investors, incubators, and startup accelerators and aware them on the various business opportunities in the domain name industry
- Engage with all local stakeholders through country visits
- Engage via a dedicated mailing list ([MEAC ICANN](#))

Questions?!



Naveed Bin Rais (Associate Professor | MAJU |
naveedbinrais@gmail.com)

Fahd Batayneh (Stakeholder Engagement Manager,
ME | ICANN | fahd.batayneh@icann.org)

W: <http://icann.org/>



twitter.com/icann



[gplus.to/icann](https://plus.google.com/icann)



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