TLD Universal Acceptance, KSK Rollover & engagements

Save Vocea | PacNOG 19, Nadi, FJ | 28 Nov 2016

Overview


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1. What is ICANN?

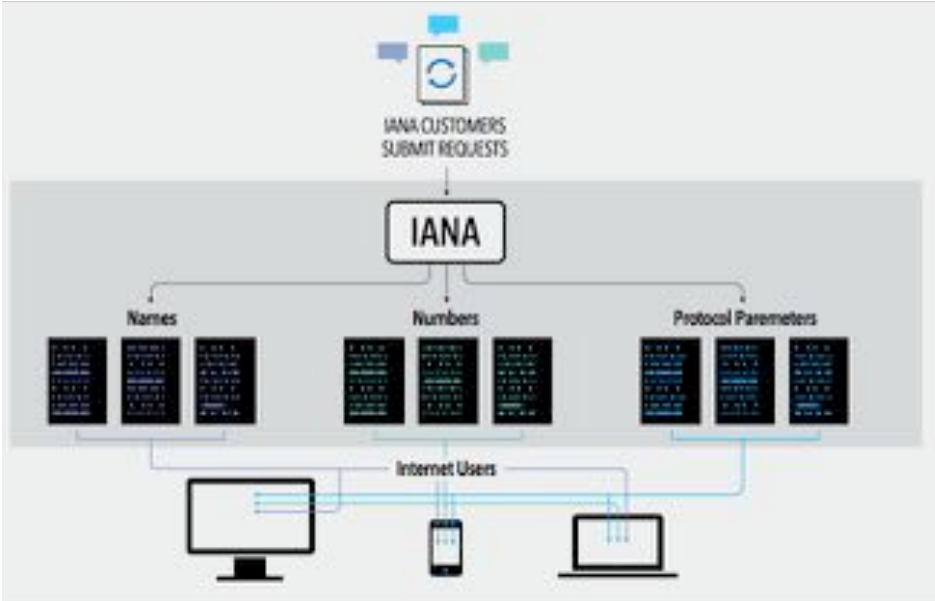
The Internet Corporation for Assigned Names and Numbers (ICANN) is a global multistakeholder, private sector-led organization that manages Internet resources for the public benefit

- ICANN coordinates the top-level of the Internet's system of unique identifiers – the Domain Name System – via global, multistakeholder, bottom-up consensus policy processes. The outcome of those processes is implemented via the IANA Functions and related contracts

- Any stakeholder with an interest in the Domain Name System can have a voice directly heard in decision making

The IANA Functions

The IANA Functions evolved in support of the Internet Engineering Task Force (IETF), and initially funded via research projects supported by the U. S. Department of Defense, Advance Research Projects Agency.



These functions include:

- The coordination of the assignment of technical Internet protocol parameters
- The administration of certain responsibilities associated with Internet DNS Root zone management
- The allocation of Internet IP addresses

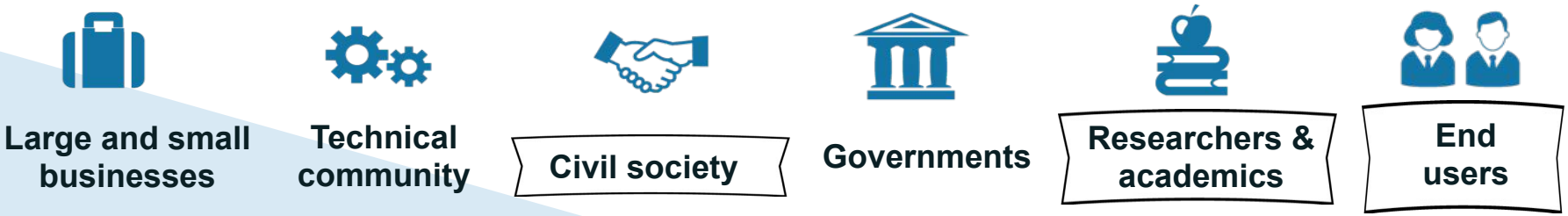
ICANN was created to perform the IANA Functions and has done so pursuant to a no-cost contract with the Department of Commerce for over 15 years

How ICANN works?
ICANN's Multistakeholder Model

What is the multistakeholder community?

"Stakeholder" refers broadly to anyone who has an interest in the Internet

Within ICANN, stakeholders include:



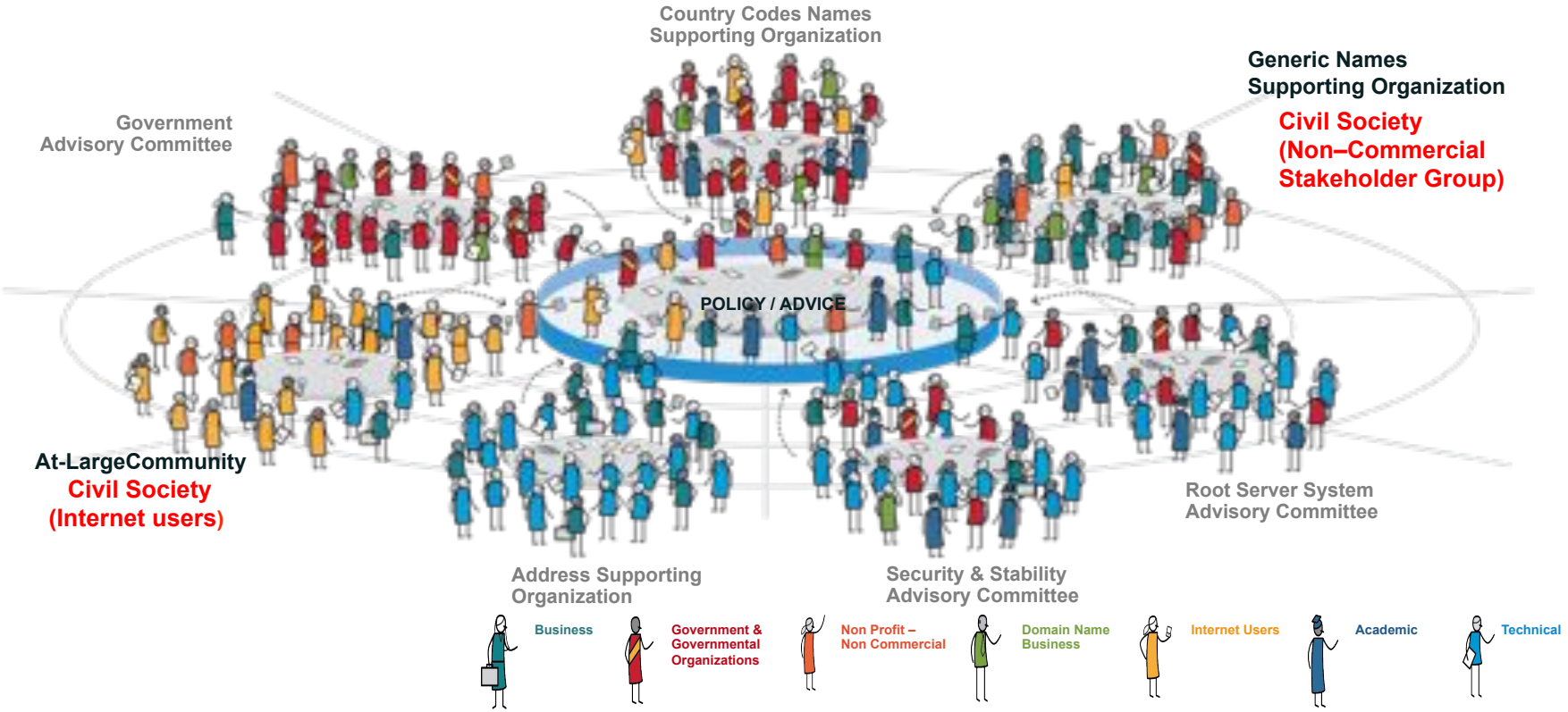
- The multistakeholder community functions on bottom-up consensus building which, by design, is resistant to capture due to the openness, diversity and equal division of authority among participants
- ICANN's multistakeholder community supports the success of the Internet's DNS
- The Internet is essential to all aspects of our lives –as individuals, companies, government and civil society– and how the Internet is managed and how policies are made affects us all
- Civil Society includes not-for-profit and non-governmental organizations, activists, as well as researchers, academics and non-commercial end-users with an interest in the development and deployment of the Internet and public policy related to the DNS

The ICANN Community At Work

The Bottom-Up Multistakeholder Model

The collective efforts of the ICANN community culminate in a common shared goal:

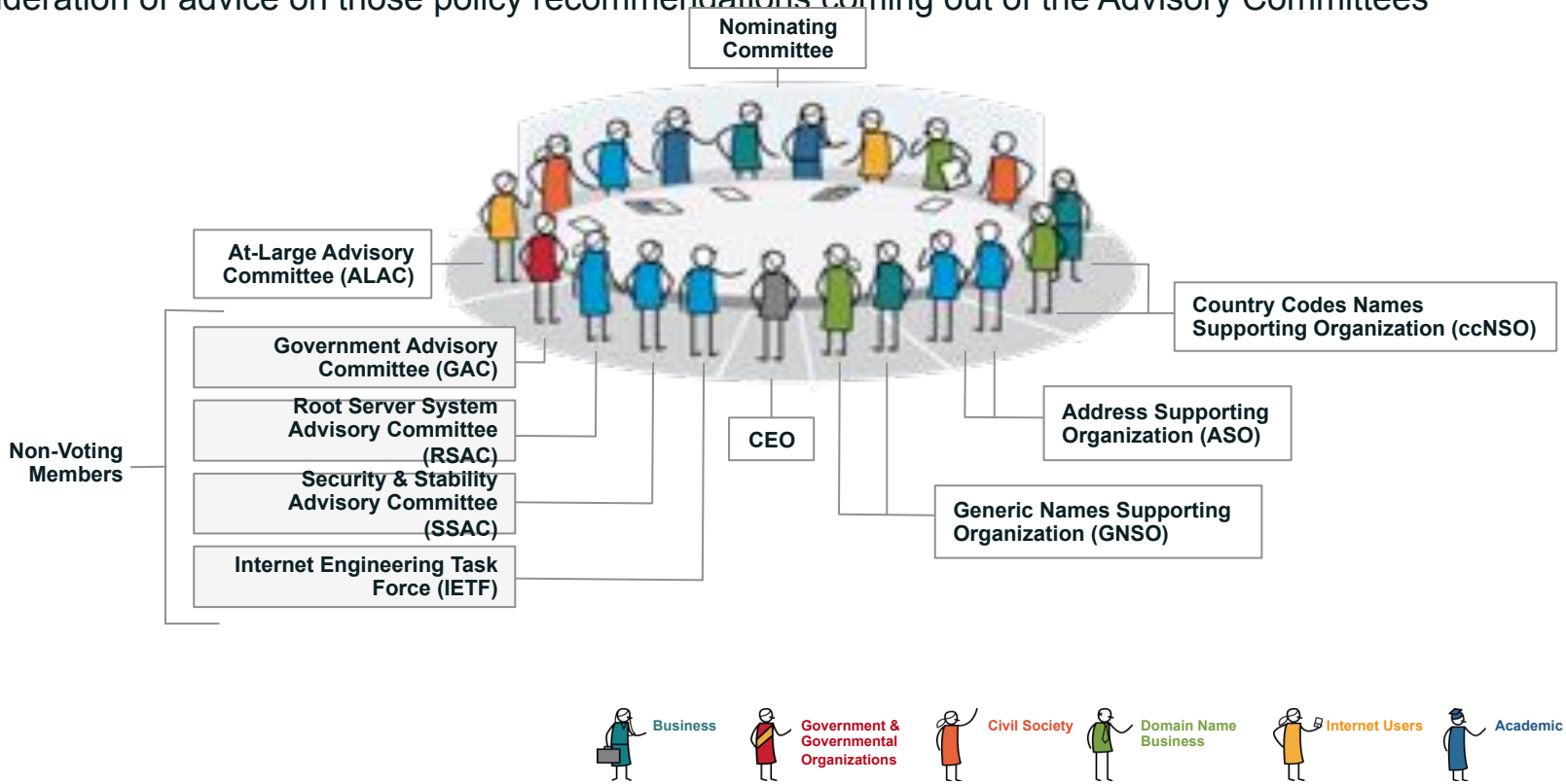
A single, interoperable Internet supported by stable, secure and resilient unique identifier systems.



The ICANN Community At Work

ICANN Board of Directors

The ICANN Board is responsible for the oversight of the strategy and operations of ICANN, as well as consideration of policy recommendations arising out of the Supporting Organizations, including, as necessary, consideration of advice on those policy recommendations coming out of the Advisory Committees




IANA Stewardship
Transition High-level
Overview

The U.S. Government's Announcement

14 March 2014: U.S. Government announces intent to transition its stewardship of the IANA functions to the global multistakeholder community

The U.S. Government's announcement:

- Marked the final phase of the privatization of the DNS
- Further supports and enhances the multistakeholder model of Internet policy making and governance

ICANN was asked to serve as a facilitator, based on its role as the IANA functions administrator and global coordinator for the Internet's Domain Name System (DNS)

30 September 2016: After more than 2 years of work by the ICANN multistakeholder community, the IANA stewardship transition was completed.

Parallel processes

The community developed two parallel processes:

IANA Stewardship Transition
Focused on delivering a proposal to transition the stewardship of the IANA functions to the multistakeholder community

Enhancing ICANN Accountability
Focused on ensuring that ICANN remains accountable in the absence of its historical contractual relationship with the U.S. Government

The IANA Stewardship Transition: ICG

The IANA Stewardship Transition Coordination Group **(ICG)** was formed in July 2014 to assemble and deliver a proposal to NTIA through the ICANN Board

- The ICG was made up of **30 individuals** representing **13 communities** of both direct and indirect stakeholders of the IANA functions
- The ICG's responsibilities included:

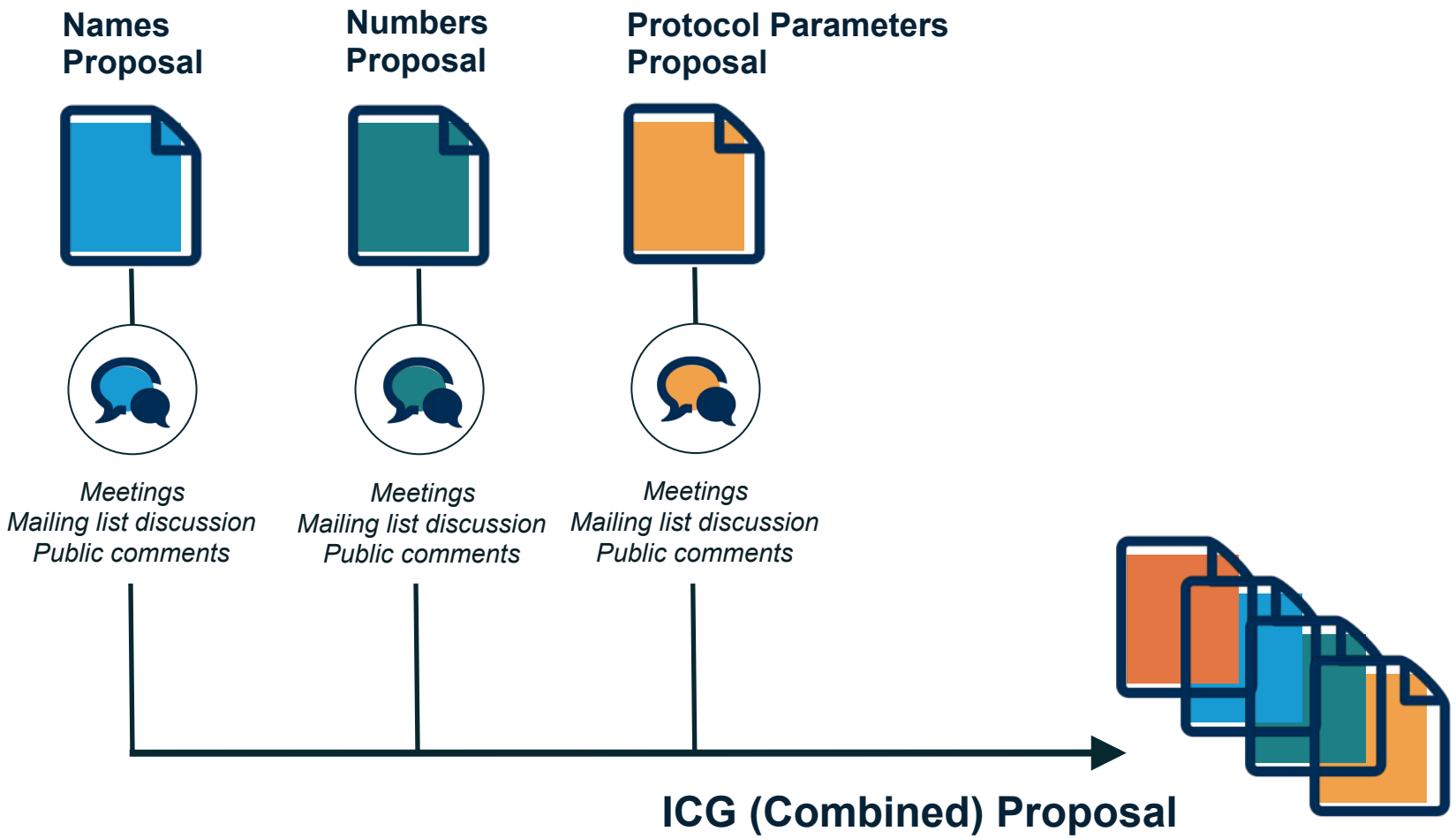
Acting as a **liaison** to all interested parties, including the three operational communities of the IANA functions

Assessing the outputs of the three operational communities for **compatibility** and **interoperability**

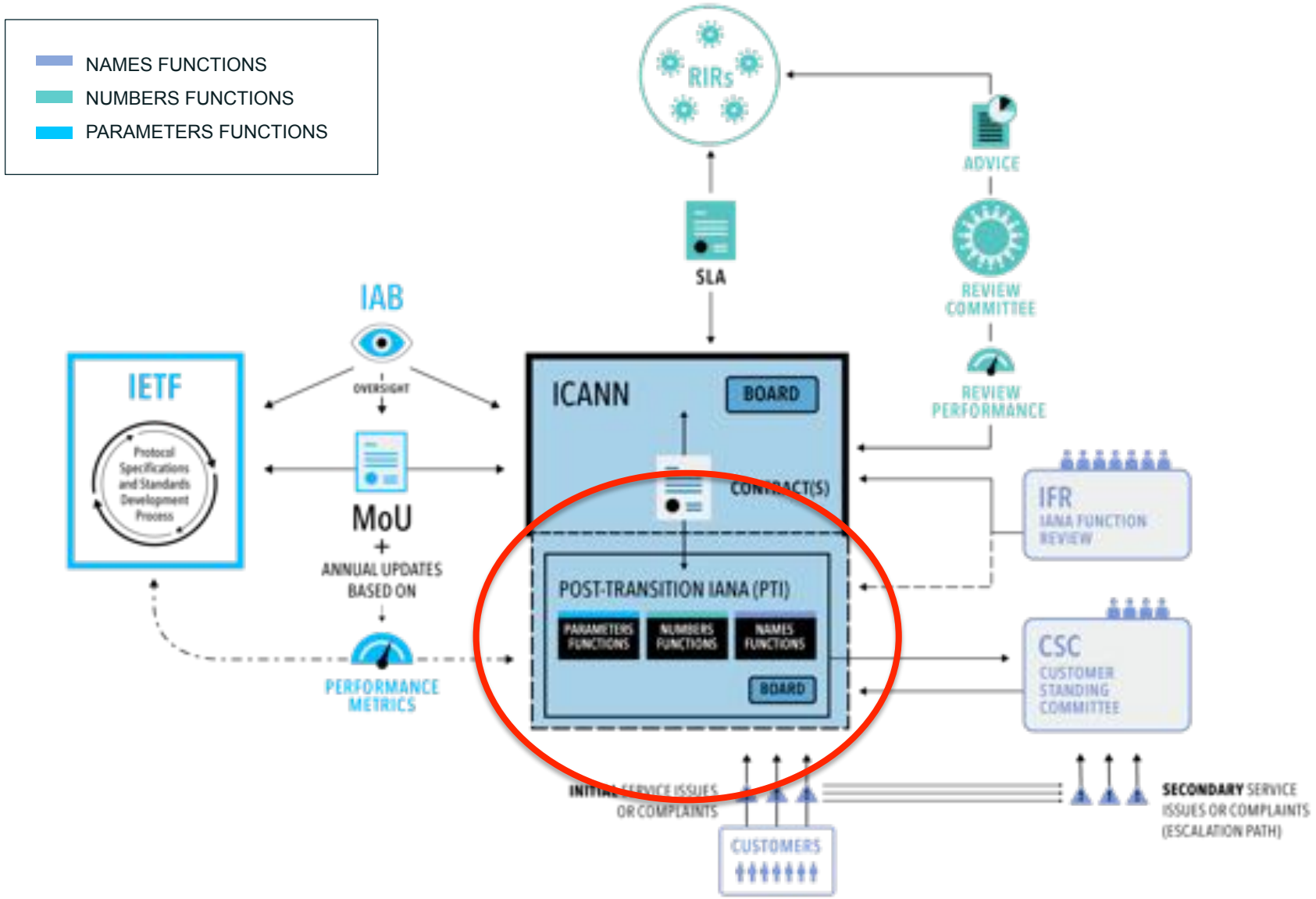
Assembling a complete proposal for the transition

Information sharing and public communication

Request for Transition Proposal Structure



Combined Proposal Overview



Operational interactions between the communities and the IANA functions operator are not pictured.

New gTLD Program

New generic Top-Level Domains

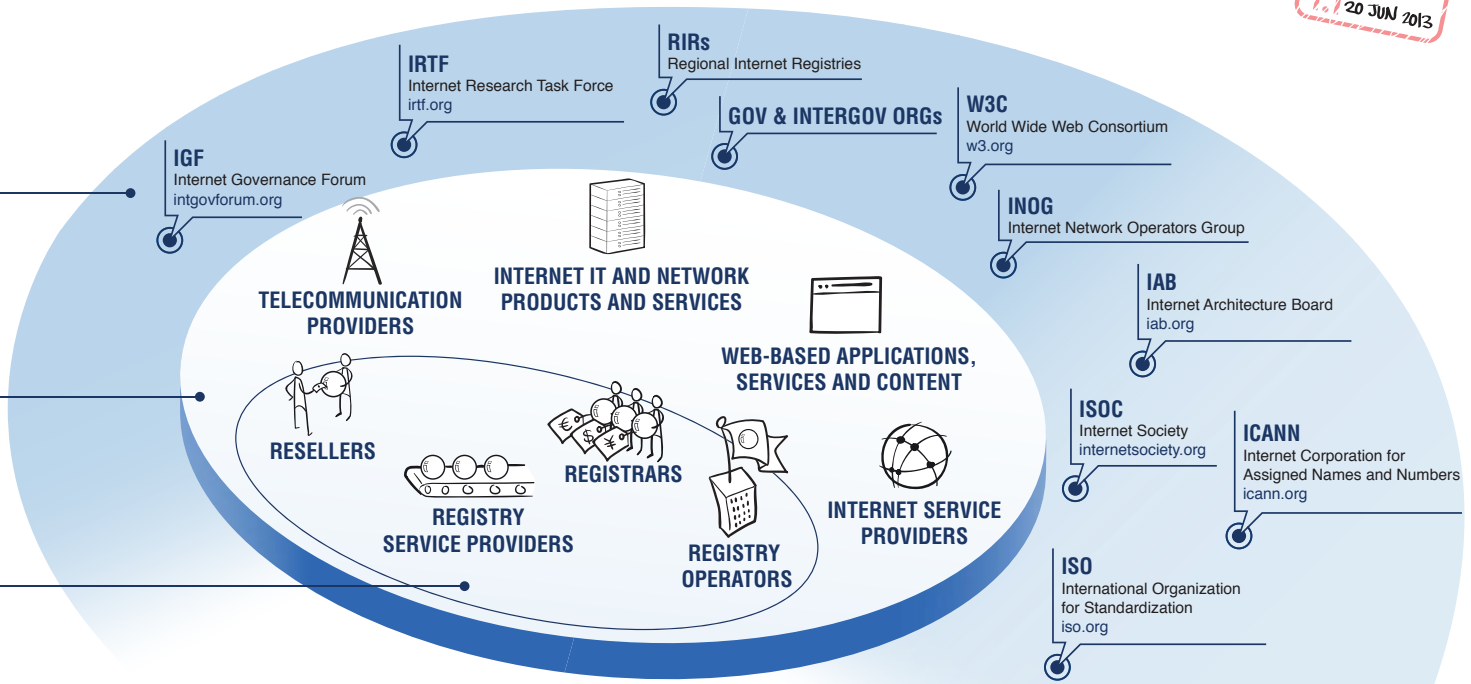
Potentially
1300+
Delegated by 2017

- Business opportunity
- Brand and trademark protection issues
- Technical requirements

THE DOMAIN NAME INDUSTRY

ECOSYSTEM

VERSION 1.1 20 JUN 2013



INTERNET COORDINATION LAYER

They work cooperatively from their respective roles to create shared policies and standards that maintain the Internet's global interoperability for the public good.

ICT SECTOR

Service providers and industries that contribute to the distribution and evolution of the Internet.

DOMAIN NAME INDUSTRY

Organizations, businesses and individuals involved in the provision, support and sale of domain names.

REGISTRY SERVICE PROVIDERS

Registry Service Providers manage the technical operations in support of Registry Operators.

REGISTRY OPERATORS

Registry Operators are responsible for the management, administration, and promotion of a Top-Level Domain.

REGISTRARS

Registrars manage the provisioning of domain names under a Top-Level Domain.

RESELLERS

Resellers are appointed by Registrars to increase their distribution network.

This graphic is a living document, designed to provide a high level view of the relationship between the different parties of the Domain Name Industry. It is for illustrative purposes only and is not intended to be a definitive guide. Some of the names of the documents may vary. Please provide feedback at www.xplanations.com/domainnameindustry

2. TLD Universal Acceptance

UA in a Nutshell

Universal Acceptance (UA) ensures that all valid domain names and email addresses can be used by all Internet-enabled applications, devices and systems.

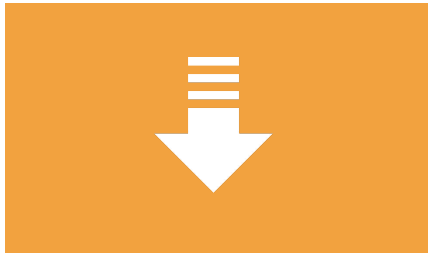
Anatomy of an email address

username@example.com

测试5@普遍接受-测试.世界

- *Username/ 测试5*
  - *Mailbox name*
  - *Can be in ASCII or Unicode*
- *Second level domain name (example/ 普遍接受-测试)*
  - *Can be ASCII or Unicode.*
  - *Unicode can be represented as Unicode or Punycode*
- *Top Level Domain name (.com/.世界)*
  - *Can be ASCII or Unicode*
  - *Unicode can be represented as Unicode or Punycode*
  - *Can be 2 to 63 characters long*
  - *Can ONLY be from an authoritative list that is dynamic and has more than 1,000 choices*

Five Verbs to UA Readiness



Accept

Validate

Store

Process

Display

Our Target Audiences

Doers

Developers & Systems Architects

Directors

CIOs and senior IT Management

Influencers

C suite, Thought Leaders, Government Ministers and Officials*

Why Bother?

- Enablement for culture, society and economics
- Responsibility to comply with standards
- UA results in better User eXperience (UX)

Tools & Resources for Developers

Authoritative Tables:

* http://www.internic.net/domain/root.zone
* http://www.dns.icann.org/services/authoritative-dns/index.html
* http://data.iana.org/TLD/tlds-alpha-by-domain.txt
* See also SAC070: https://tinyurl.com/sac070

Internationalized Domain Names for Applications:

* Tables: https://tools.ietf.org/html/rfc5892
* Rationale: https://tools.ietf.org/html/rfc5894
* Protocol: https://tools.ietf.org/html/rfc5891

Unicode:

* Security Considerations: http://unicode.org/reports/tr36/
* IDNA Compatibility Processing: http://unicode.org/reports/tr46/

Universal Acceptance Steering Group info & recent developments: www.uasg.tech

Next Steps…

* Read the documents at www.uasg.tech/documents
  * UASG003 – Fact Sheet
  * UASG005 – Quick Guide
  * UASG007 – Introduction to UASG
  * UASG011 – FAQs
* Subscribe to the UASG Discussion list www.uasg.tech/subscribe
* Get your own systems UA Ready
* Spread the word…

3. Key Signing Key (KSK) Rollover

KSK Rollover: An Overview

ICANN is in the process of performing a Root Zone DNS Security Extensions (DNSSEC) Key Signing Key (KSK) rollover

- **The KSK is a cryptographic public-private key pair:**
  - **Public part: trusted starting point for DNSSEC validation**
  - **Private part: signs the Zone Signing Key (ZSK)**
    - **Builds a "chain of trust" of successive keys and signatures to validate the authenticity of any DNSSEC signed data**

KSK Rollover: An Overview

- As with passwords, the cryptographic keys used in DNSSEC-signing DNS data should be changed periodically
  - Ensures infrastructure can support key change in case of emergency
- This type of change has never before occurred at the root level
- The KSK coordina… with normal …

Who Will Be Impacted?

DNS Software Developers & Distributors

System Integrators

Network Operators

Root Server Operators

Internet Service Providers

End Users
(if no action taken by resolver operators)

Don’t Get Locked Out!

- **To help ensure trouble-free Internet access for their users, Internet service providers, enterprise network operators and others who have enabled DNSSEC validation must update their systems with the public part of the new KSK (the root “trust anchor”)**
  - **Available from** https://www.iana.org/dnssec/files

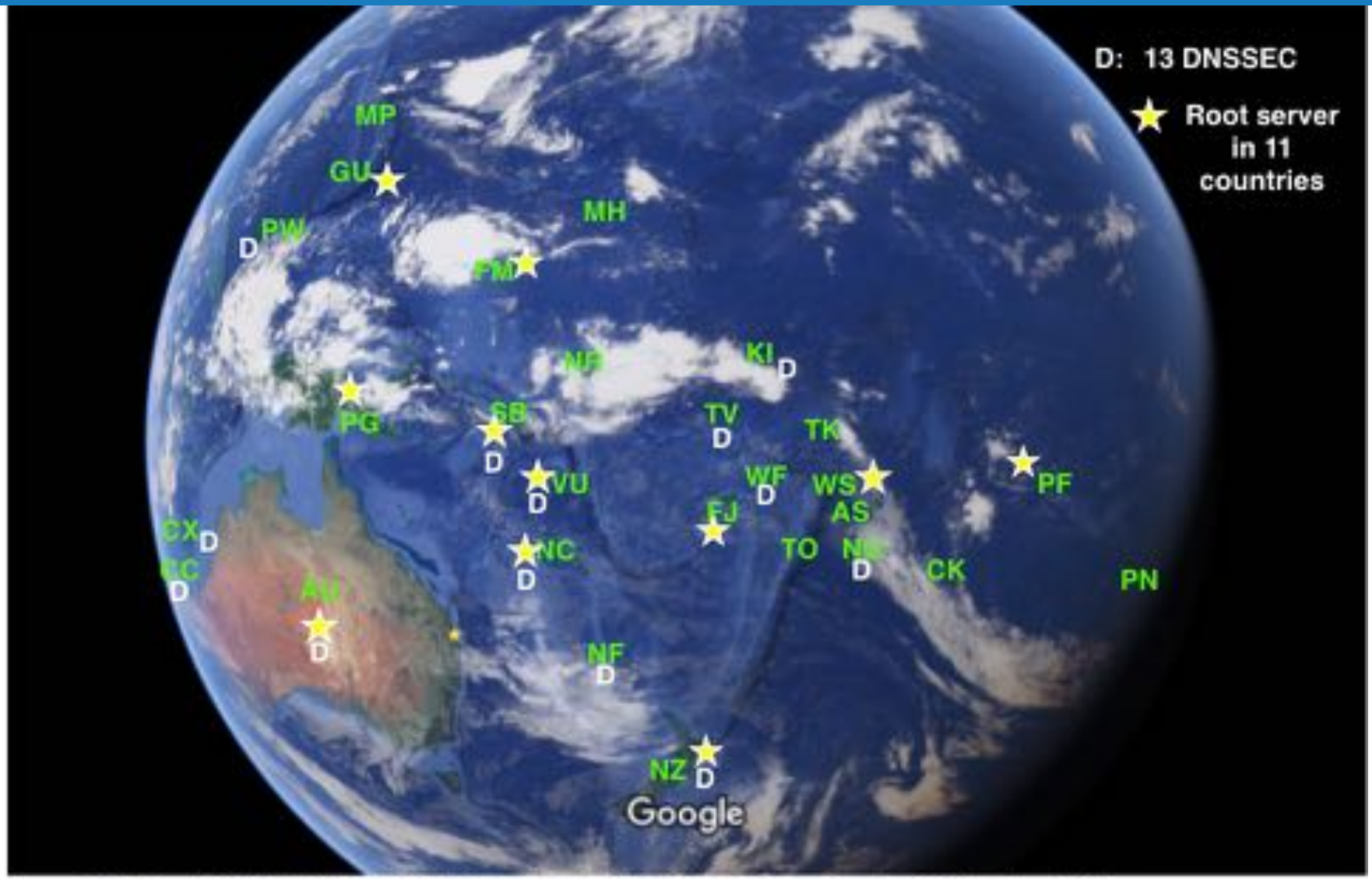
- **Key dates of the process when end users may experience interruption in Internet services:**
  - **19 September, 2017**
    Size increase for DNSKEY response from root name ser
  - **11 October, 2017 – Most important date**
    New KSK used for signing for the first time
  - **11 January, 2018**
    The old KSK is revoked

For More Information

- Visit https://icann.org/kskroll
  - Share this resource with others
- Join the conversation online:
  - Use the hashtag #KeyRoll
  - Sign up to the mailing list https://mm.icann.org/listinfo/ksk-rollover
- Ask a question to globalsupport@icann.org
  - Subject line: “KSK Rollover”
- Visit https://features.icann.org/calendar to find upcoming KSK rollover presentations

4. ICANN-Oceania Engagement

Oceania and its 27 ccTLDs / economies



Data related to ICANN-Oceania

1. 78% ccTLDs are country code Names Supporting Organisation (ccNSO) members
2. 100% Governmental Advisory Committee (GAC) representation
3. 9 At-Large-Structures (ALS) from 5 economies
4. Root server instances in 11 economies
5. 33 applicants during last gTLD round
6. AS, AU, NZ, CK, FJ, KI, NU, PG reps participated in ICANN57 mtg.

ICANN-Oceania Engagement Strategy

Increase Oceania participation in ICANN

- Increase SO/AC membership
- Promote newcomers / fellowship program
- Regional representation in community WG, SO/AC leadership
- Input to ICANN processes
- Remote hubs for participation

Support Internet Security, Stability and Resiliency

- L-root instance host
- DNSSEC implementation
- Public safety (LEAs)
- ccTLD management
- CERTs support
- IPv6 deployment messaging

Educational / Capacity building

- Training programs (NOGs, Govt, Public Safety)
- Outreach and responsiveness to stakeholders
- New gTLDs
- Awareness of ecosystem (Registrars/ Registries)
- IANA and its processes (ccTLD best practices)
- MSM and Internet Governance (national and regional)

Outcomes and benefits for ICANN/Oceania

1. Support ICANN globalization
2. Trust in ICANN and its systems
3. Support stable, secure, resilient DNS operations
4. Understand region, stakeholder and community needs
5. Enhance participation in ICANN
6. Economical and effective engagement

Stay Informed and Participate

Learn More

ICANN Learn

Business Digest

Thank You and Questions

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