



# Support a healthy, stable and resilient unique identifier ecosystem

Save Vocea | PacNOG18 | Guam, 30 Nov 2015

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of Digital  
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ICANN's Multi-  
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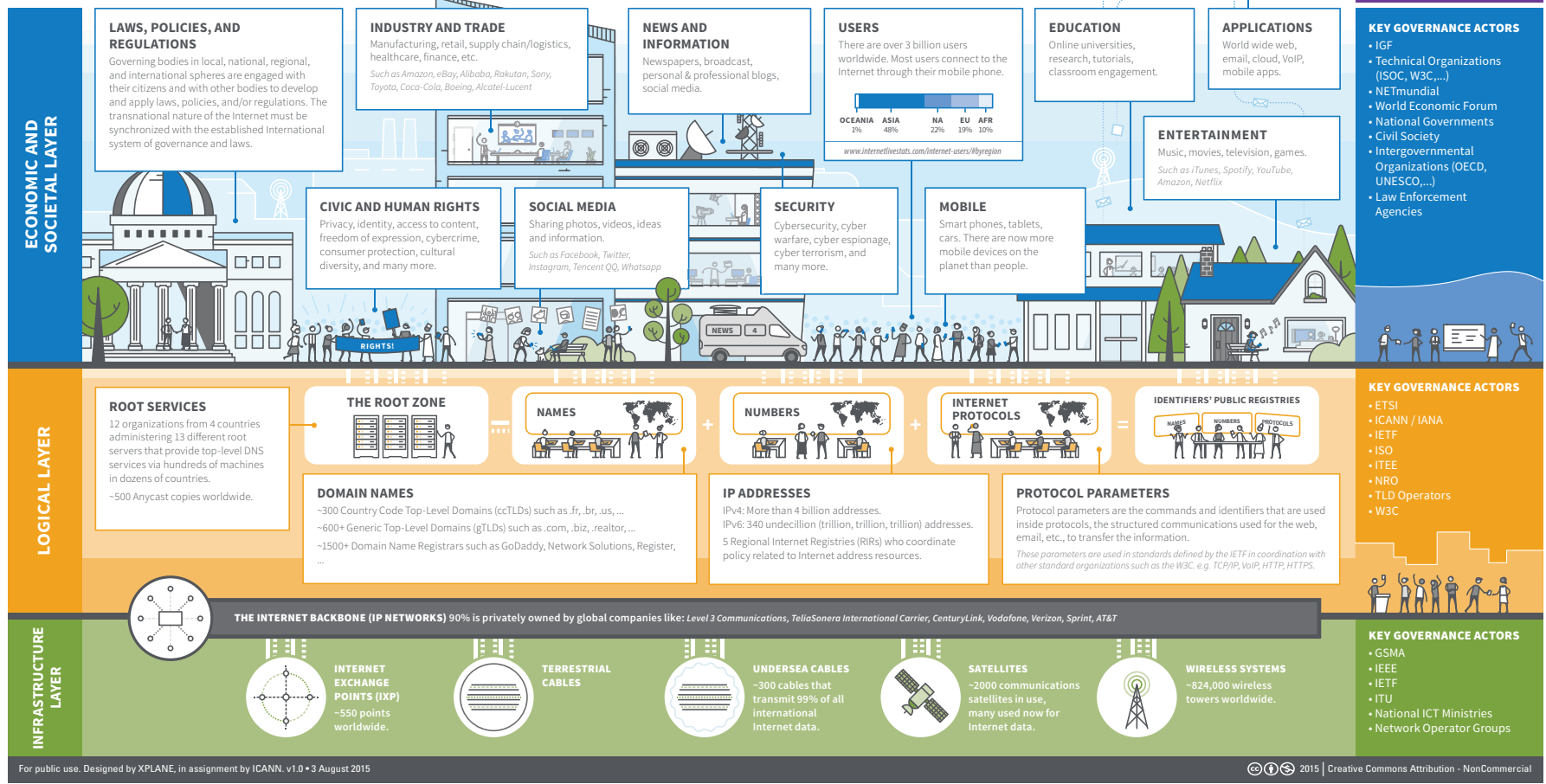


# THE THREE LAYERS OF DIGITAL GOVERNANCE

No one person, government, organization, or company governs the digital infrastructure, economy, or society. Digital governance is achieved through the collaborations of Multistakeholder experts acting through polycentric communities, institutions, and platforms across national, regional, and global spheres. Digital Governance may be stratified into three layers to address infrastructure, economic, and societal issues with solutions. For a map of Digital Governance Issues and Solutions across all three layers, visit <https://map.netmundial.org>



**MULTISTAKEHOLDER COLLABORATIONS**  
Solutions to issues in each layer include policies, best practices, standards, and specifications developed by the collaborations of expert stakeholders from actors in business, government, academia, technical, and civil society.



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# Internet Corporation for Assigned Names and Numbers (ICANN)



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.



- ⊙ A global multistakeholder, private sector organisation that manages Internet resources for the public benefit.
- ⊙ Promotes competition and develops policy on the Internet's unique identifiers
- ⊙ Hub offices located in Los Angeles (HQ), Istanbul and Singapore
  - ⊙ With engagement centers in Montevideo, Washington DC, Brussels, Geneva, Beijing and Seoul

Website: <http://www.icann.org>





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## 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

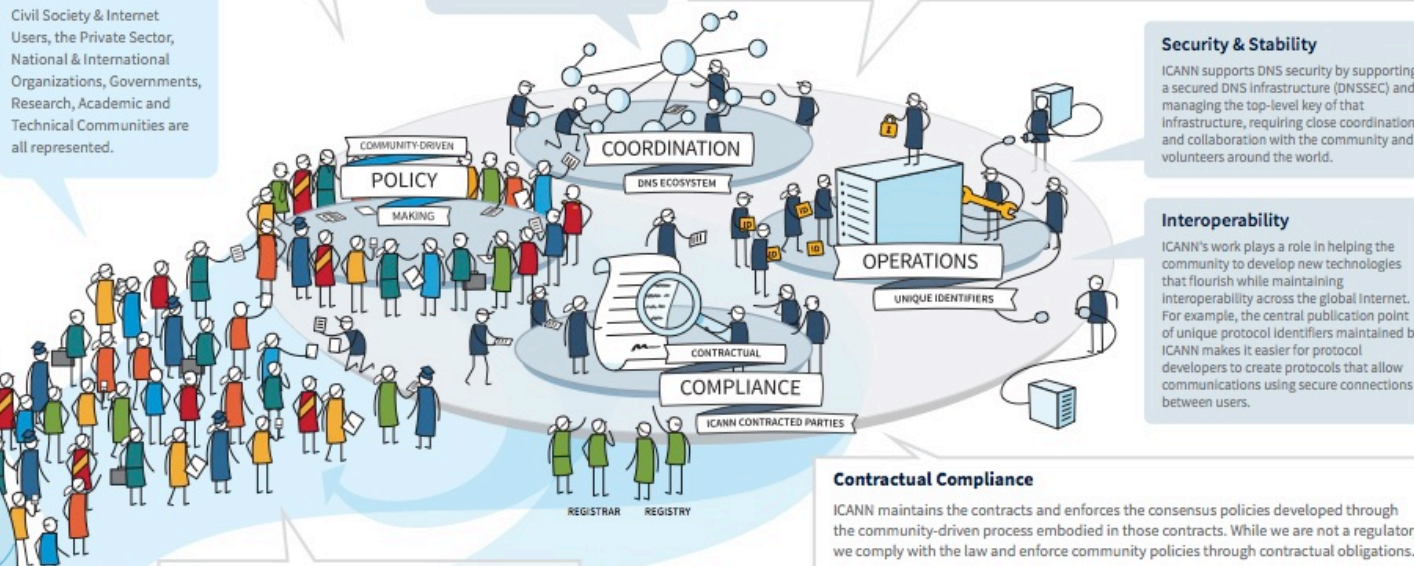
- Development of generic TLD policy
- Facilitation of country code TLD policy discussions
- Delegation of and changes to Top-level domains
- Management of the root's DNSSEC trust anchor
- Facilitating Root Server System discussions

### 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](http://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





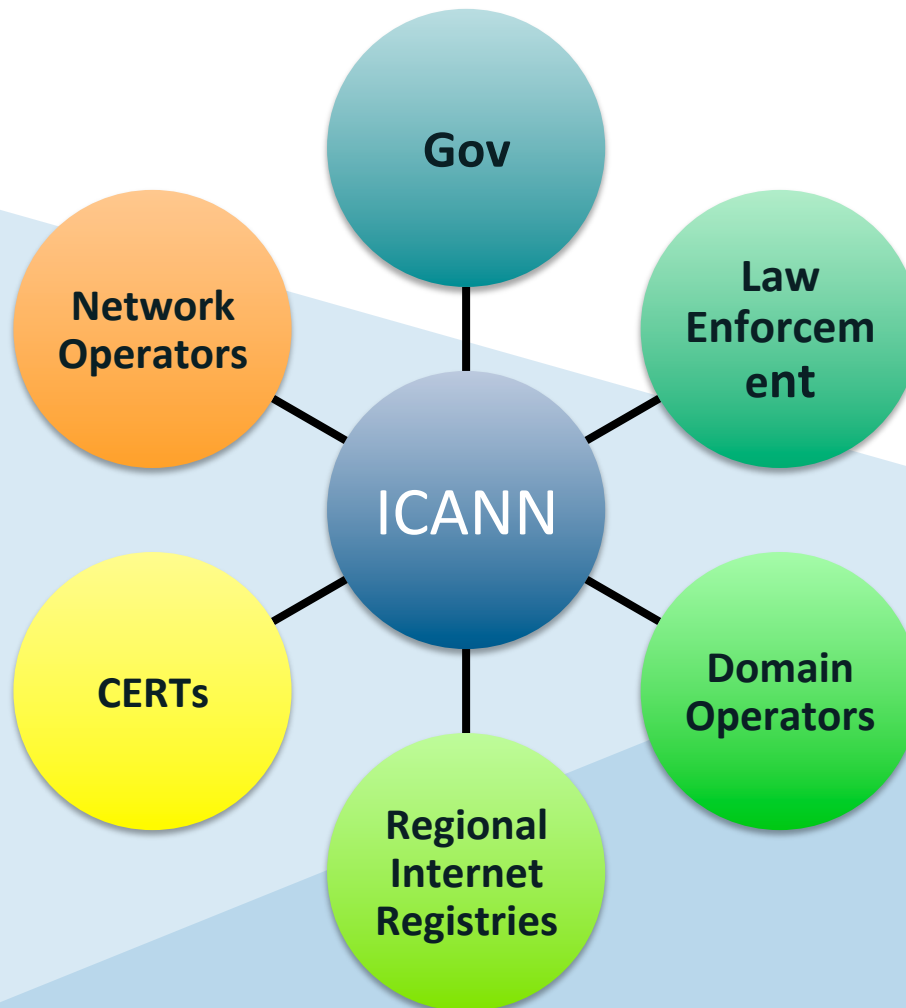
# ICANN Engagement (Oceania)

# Updates from ICANN 54

- + Main discussions around IANA Stewardship Transition and ICANN accountability
  - + ICG concluded its work at ICANN54
  - + CCWG-Accountability to finalize a draft proposal to be put out for public comment
- + Supporting Organisation and Advisory Committees sessions
  - + ccNSO Tech Day
  - + ISP and Connectivity Providers meeting
- + New gTLDs update, Universal Acceptance, DNSSEC, SSR

# Security, Stability, & Resiliency (SSR) A key pillar of ICANN

The Internet – our “Network of Networks”



Threat Awareness and Response

Trust-based Collaboration

Capability Building

Identifier SSR Analytics

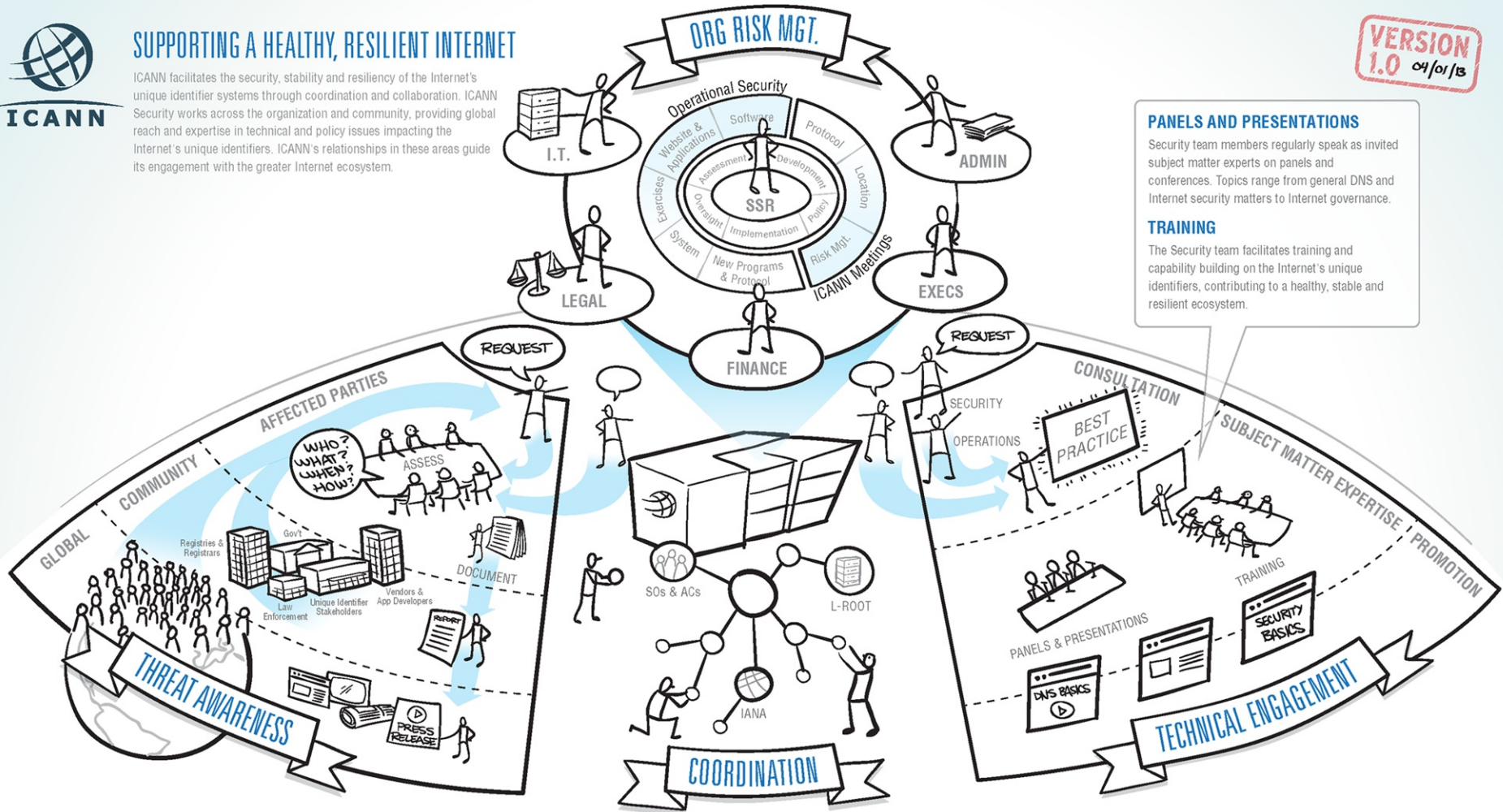




## SUPPORTING A HEALTHY, RESILIENT INTERNET

ICANN facilitates the security, stability and resiliency of the Internet's unique identifier systems through coordination and collaboration. ICANN Security works across the organization and community, providing global reach and expertise in technical and policy issues impacting the Internet's unique identifiers. ICANN's relationships in these areas guide its engagement with the greater Internet ecosystem.

**VERSION 1.0**  
04/01/13



**PANELS AND PRESENTATIONS**  
Security team members regularly speak as invited subject matter experts on panels and conferences. Topics range from general DNS and Internet security matters to Internet governance.

**TRAINING**  
The Security team facilitates training and capability building on the Internet's unique identifiers, contributing to a healthy, stable and resilient ecosystem.

### COORDINATE & COLLABORATE



The Security team is regularly invited to speak with community stakeholder groups, and facilitates activity with ICANN's Supporting Organizations and Advisory Committees.

### PUBLICIZE & PROMOTE



The Security team provides thought leadership in the form of white papers, blog posts and the annual Security, Stability & Resiliency Framework for ICANN.

Team members represent ICANN at various conferences and events worldwide, speaking on cybersecurity and governance, the Internet's unique identifiers and ICANN.

### CONSULT & ADVISE



The team contributes to scenarios for global cyber exercises, provides advice on operational practices such as with the root server community and DNS technical community.

### REVIEW & COMMENT



The team regularly provides input into policy development processes, comments on protocols and open standards managed by others in the Internet ecosystem.

XPLANATIONS™ by XPLANE.com

# Root Servers to benefit Internet Stability and Resiliency



- + Root server nodes keep Internet traffic local and resolve queries faster
- + Make it easier to isolate attacks
- + Reduce congestion on international bandwidth
- + Redundancy and load balancing with multiple instances
- + ICANN is the L-Root Operator

# L-Root presence

- + Geographical diversity via Anycast
  - + Over 160 dedicated servers
  - + Presence on every continent
- + On normal basis 15,000 ~ 25,000 queries/sec
  - + Approx. 2 billion DNS queries a day
- + We are supporting root server deployment in countries
  - + Contact ICANN staff in the region



# L-Root anycast server locations





Responding to the bad –  
Where does DNSSEC fit in

# DNSSEC protects DNS data

- + CPU and bandwidth advances make legacy DNS vulnerable to MITM attacks
- + DNS Security Extensions (DNSSEC) introduces digital signatures into DNS to cryptographically protect contents
- + With DNSSEC fully deployed a business can be sure a customer gets un-modified data (and visa versa)



# ICANN strongly supports DNSSEC

- + Cyber security is becoming a greater concern to enterprises, government, and end users. DNSSEC is a key tool and differentiator.
- + DNSSEC is the biggest security upgrade to Internet infrastructure in over 20 years. It is a platform for new security applications (for those that see the opportunity).
- + DNSSEC infrastructure deployment has been brisk but requires expertise. Getting ahead of the curve is a competitive advantage.

# DNSSEC supported ccTLD Map



# SSR Capability Building

## Capability Building

### DNS Training

- Security
- DNS Operations
- Abuse/Misuse

### Knowledge Transfer

- Europol
- Interpol
- RIRs

- Training and Outreach
  - Security, operations, and DNS/DNSSEC deployment training
    - for TLD registry operators
    - Network Operators / ISPs
    - Enterprises, Corporates etc.
  - Information gathering to identify Internet Identifier Systems abuse/misuse and Investigation Techniques
    - Law Enforcement Agencies
    - CERTs
    - Internet Investigators etc.



# SSR Engagement in the Pacific

## + Engaging with Governments, LEA's and ccTLDs

### + Pacific SSR Roadshow

- TO, KI, FJ (Apr'15)
- WS (Jul'15)
- NR, MH, FM, PW (Sep'15)

### + DNSSEC Workshop

- VU (Nov'14)



## + Technical and Operational Forums

- + Sponsorship funding, trainer resources etc.
- + PacNOG Conferences

# Conclusion

- ⦿ Need for local stakeholders to engage in open, bottom up and transparent Internet governance processes
  - ⦿ Have a voice at regional and International bodies/forum
- ⦿ Promote and raise awareness of new business opportunities in the domain names industry
  - ⦿ Strengthen local ccTLD management
  - ⦿ Opportunities for Registry and Registrar operations
- ⦿ Engage with ICANN
  - ⦿ Join the ISP and Connectivity Providers (ISPCP) constituency
  - ⦿ Register interests in capacity building and fellowships to meetings
  - ⦿ Follow meetings remotely
  - ⦿ Register and use for free ICANNLearn (self-paced learning)

# Engage with ICANN



## Thank You and Questions

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Website: [icann.org](http://icann.org)



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