

# ISPCP

Internet Service and Connectivity Providers Constituency

Why Network Operators Should  
Get Involved in ICANN





# What is ICANN

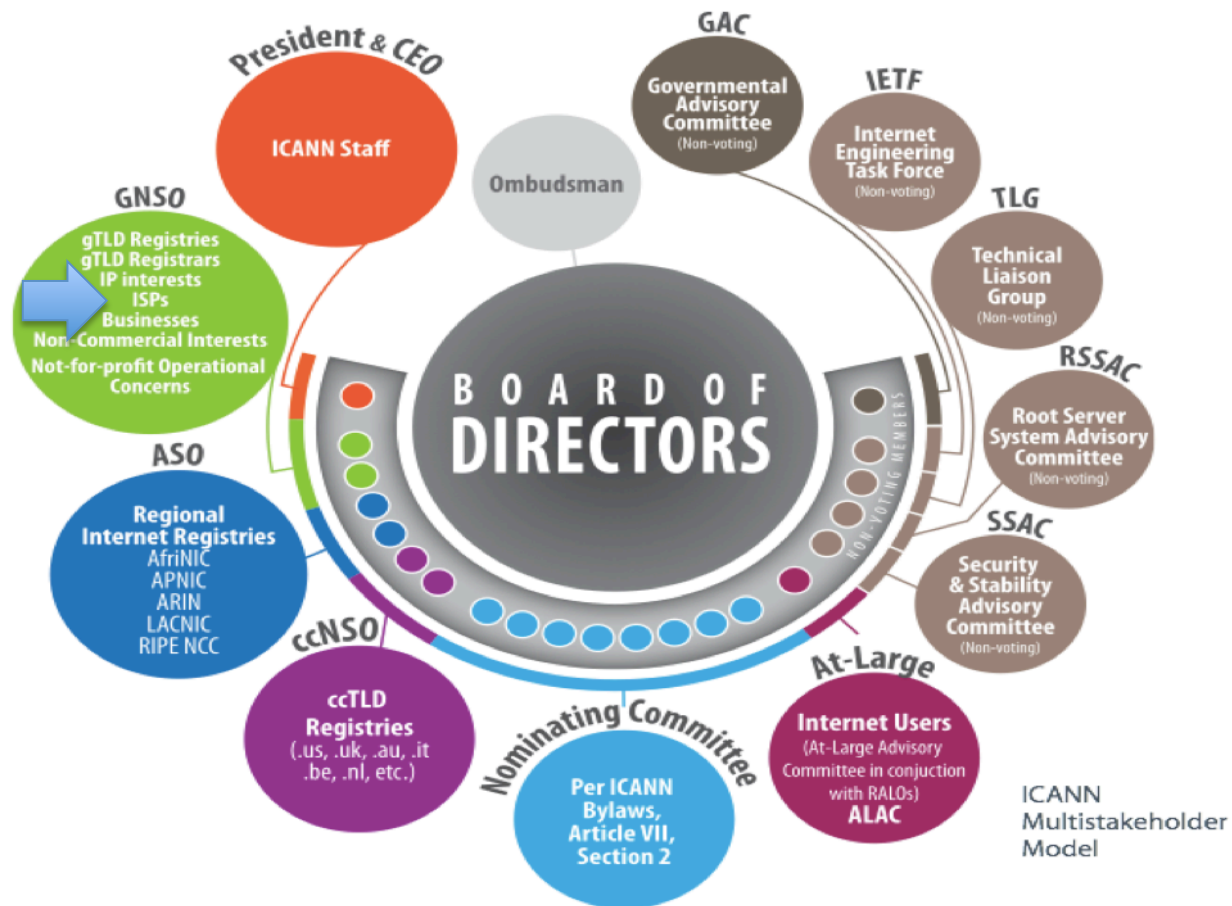


- Internet Corporation for Assigned Names and Numbers, <http://www.icann.org/>
- Coordinates the global Internet's unique identifiers and stable operation of the system of them, at the global level
- Domain Names, IP numbers and protocol numbers
- Three meetings held in a year touring all around the world



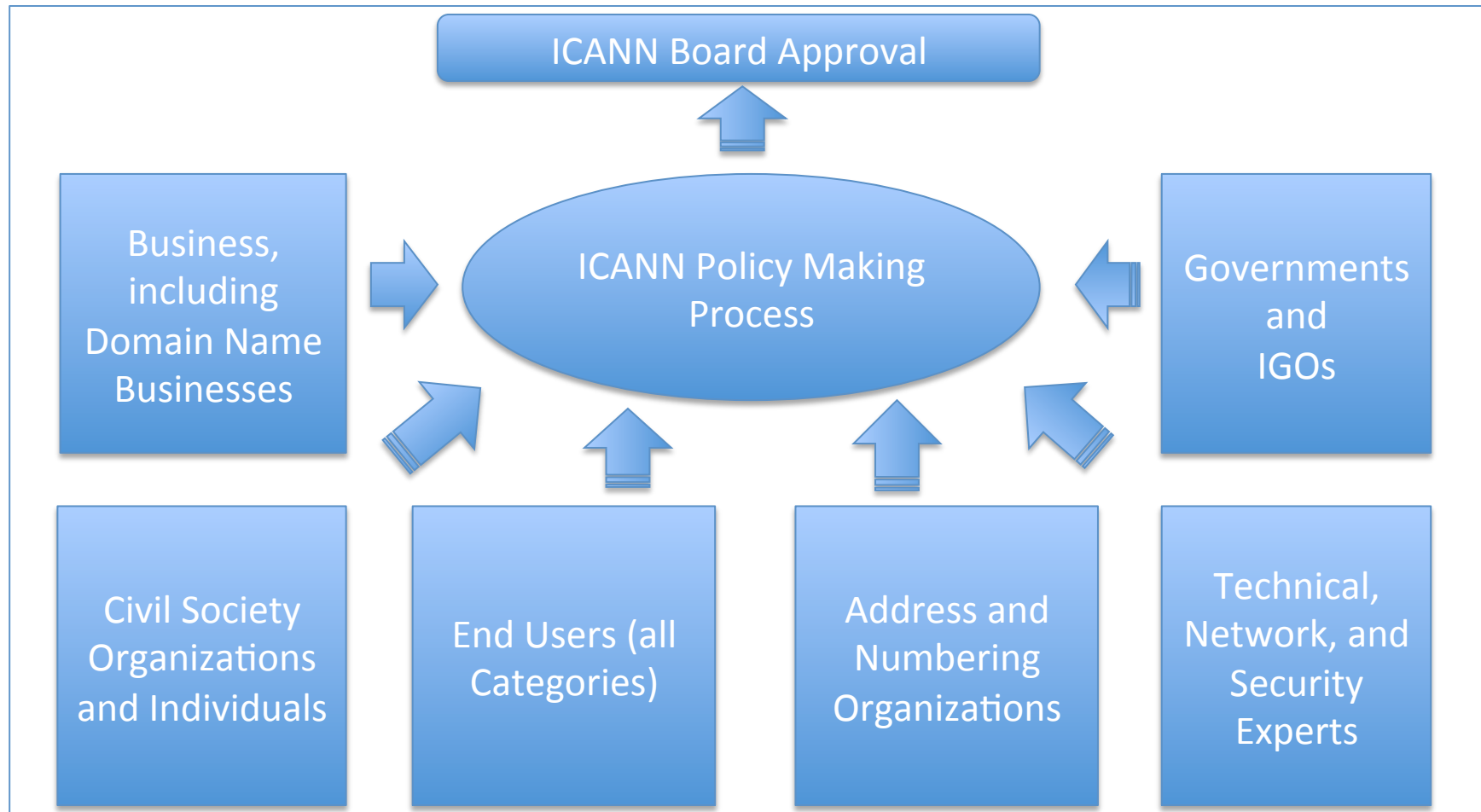
# ICANN Organizational Structure

## Multistakeholder Model





# Multistakeholder Policy Making





# ICANN GNSO Structure





# What is ISPCP



- Technology oriented, concerned for sustainable operation of the Internet Infrastructure
  - SSR – Security Stability and Resiliency
  - DNSSEC
  - IPv6
  - Name Collisions
- Representing users who are their respective customers to better serve them



# What is ISPCP



- A constituency within the Commercial Stakeholder Group (CSG) of Non-Contracted Party House (NCPH) of the ICANN GNSO
- It consists of those who deliver the Internet access to the users (consumers, corporates and service sites)
  - Internet Service Providers
  - Internet Connectivity Providers
  - Associations of those
- Habitant in ICANN since its establishment, even before



# Internet Governance Timeline



- October 2013:
  - Montevideo Statement
- April 2014:
  - ITU World Telecommunications Development Conference (WTDC)
  - NETmundial
- September 2014:
  - 9<sup>th</sup> Internet Governance Forum
- November 2014:
  - ITU Plenipotentiary Conference (PP-14)

1net mailing list (<http://1net.org>): platform where all sectors of the community discuss issues prior to these events



# Keep up with the issues



Open for Public Comment	Comment Period Close Date	Reply Period Close Date
<a href="#">Introduction of Two-Character Domain Names for .SOHU, .IMMO, SAARLAND, .CLUB</a> <a href="#">.org in to follow</a>	9 Sep 2014 23:59 UTC	1 Oct 2014 23:59 UTC
<a href="#">Proposed Bylaws Changes Regarding Consideration of <a href="#">GAC Advice</a></a> <a href="#">.org in to follow</a>	14 Sep 2014 23:59 UTC	6 Oct 2014 23:59 UTC
<a href="#">Implementing Rights Protection Mechanisms in the Name Collision Mitigation Framework</a> <a href="#">.org in to follow</a>	15 Sep 2014 23:59 UTC	7 Oct 2014 23:59 UTC
<a href="#">Enhancing <a href="#">ICANN</a> Accountability Process</a> <a href="#">.org in to follow</a>	27 Sep 2014 23:59 UTC	N/A
<a href="#">Introduction of Two-Character Domain Names for .JETZT, GLOBAL, .NEUSTAR, .KIWI, .BERLIN</a> <a href="#">.org in to follow</a>	3 Oct 2014 23:59 UTC	24 Oct 2014 23:59 UTC
<a href="#">Proposed Changes to <a href="#">GNSO</a> Operating Procedures</a> <a href="#">.org in to follow</a>	8 Oct 2014 23:59 UTC	30 Oct 2014 23:59 UTC
<a href="#">Release of Country and Territory Names within the <a href="#">.NEUSTAR TLD</a></a> <a href="#">.org in to follow</a>	10 Oct 2014 23:59 UTC	8 Nov 2014 23:59 UTC
<a href="#">Board Working Group Report on Nominating Committee (BWG-NomCom)</a> <a href="#">.org in to follow</a>	21 Oct 2014 23:59 UTC	13 Nov 2014 23:59 UTC

## Public Comment

- <https://www.icann.org/public-comments#open-public>



# Keep up with the issues



## SSAC Reports and Advisories

By Issue Date and Number | By Category and Charter Task | By Outcome

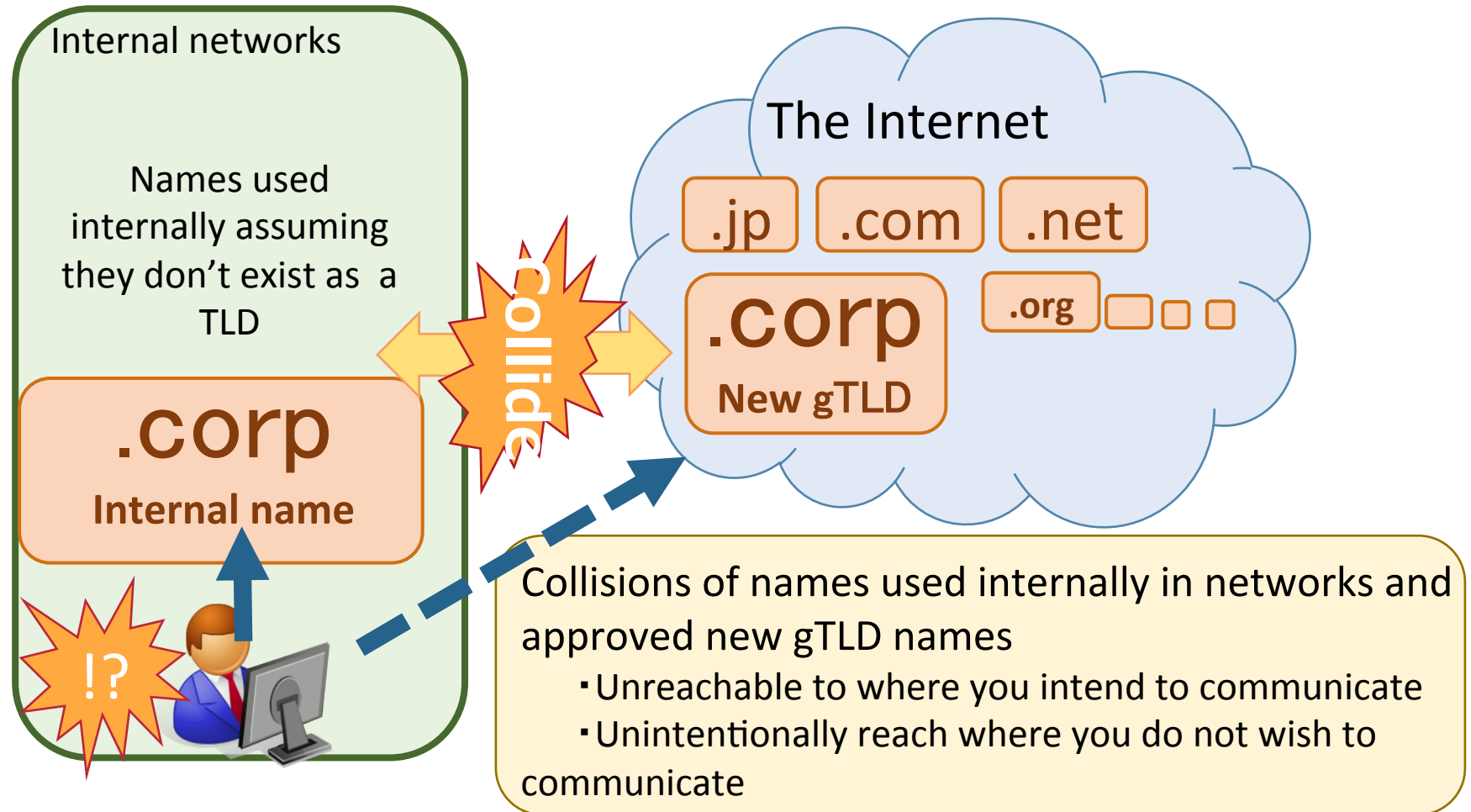
- [SAC067]: Overview and History of the IANA Functions (15 August 2014)  
[English](#) [PDF]
- [SAC066]: SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions (06 June 2014)  
[English](#) [PDF]
- [SAC065]: SSAC Advisory on DDoS Attacks Leveraging DNS Infrastructure (18 February 2014)  
[English](#) [PDF]
- [SAC064]: SSAC Advisory on Search List Processing (13 February 2014)  
[English](#) [PDF]
- [SAC063]: SSAC Advisory on DNSSEC Key Rollover in the Root Zone (07 November 2013)  
[English](#) [PDF]
- [SAC062]: SSAC Advisory Concerning the Mitigation of Name Collision Risk (07 November 2013)  
[English](#) [PDF]
- [SAC061]: SSAC Comment on ICANN's Initial Report from the Expert Working Group on gTLD Directory Services (06 September 2013)  
[English](#) [PDF]
- [SAC060]: SSAC Comment on Examining the User Experience Implications of Active Variant TLDs Report (23 July 2013)  
[English](#) [PDF]
- [SAC059]: SSAC Letter to the ICANN Board Regarding Interdisciplinary Studies (18 April 2013)  
[English](#) [PDF]

## SSAC Reports and Advisories

- <https://www.icann.org/resources/pages/documents-2012-02-25-en>



# What is Name Collision ?





# Potential impact



- Security
  - Information intended for internal communications
  - may leak out to the public DNS
  - Malicious use of internal name certificates
- Reachability
  - Direction to Unexpected Web Sites
  - Direction of Email to the Wrong Recipients



# Potential Scope of Impact



## Potential target:

- Regular firms
- ISPs (including CATV, hosting service providers)
- Network/Information home appliance vendors
- Public Certificate Authorities and its agents
- System/Network Integrators

## Potential cases of name collisions:

- Using of internal name inside networks
- Using Search list (To supplement domain name)
- Using/Issuing certificates with internal names
- Providing services using internal names
- Using internal names for URLs in configuration of equipment for the ease of user settings



# Steps to Mitigate the Problems Associated with a Private TLD

1. Monitor the requests coming into the authoritative nameservers
2. Create an inventory of each system using the private TLD in an automated fashion
3. Determine where your global DNS names are administered
4. Change the root of your private namespace to use a name from the global DNS
5. Allocate new IP addresses for hosts, if needed
6. Create a system for monitoring equivalence between the new and old private names
7. Train users and system administrators to use the new name
8. Change every affected system over to the new names
9. Begin monitoring for use of old private names at the nameserver
10. Set up long-term monitoring at perimeters to watch for old private names
11. Change all names from the old root to point to a non-functioning address
12. If certificates were issued for any hosts under the old private names, revoke them
13. Long Term Operations with the New Name

**“Guide to Name Collision Identification and Mitigation for IT Professionals” : Section 4**



# Steps to Mitigate Name Collisions Associated with Search Lists



1. Monitor the requests coming into the nameserver
2. Create an inventory of each system using short unqualified names in an automated fashion
3. Train users and system administrators in using FQDNs
4. Change every affected system over to FQDN use
5. Turn off search lists at shared name resolvers
6. Begin monitoring for use of short unqualified names at the nameservers
7. Set up long-term monitoring at perimeters to watch for short unqualified names

**“Guide to Name Collision Identification and Mitigation for IT Professionals” : Section 5**



# Key measures taken by ICANN

- Risk analysis and mitigation plan
  - ◆ Decision to reserve delegation of “.home”, “.corp” indefinitely
    - “.mail” also under consideration
    - Risk analysis and mitigation plans per TLD
  - ◆ Reporting window for name collision  
<http://www.icann.org/en/help/name-collision/report-problems>
  - ◆ Published guidelines for IT professionals
  - ◆ Considering to develop private names, in collaboration with the IETF
  - ◆ Collaboration with CA/Browse Forum to stop/revote internal name certificates



# Remaining Considerations



- Outreach
  - Reaching widely outside the ICANN community
  - Recommendation to use loopback address (127.0.53.53) for alerting the collision
- Recommendation by JAS report
  - Final Mitigating the Risk of DNS Namespace Collisions Phase One report
- Issues raised in SSAC reports
  - Define private domain names (SAC062)
  - Define standards for search lists (SAC064)
  - SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions (SAC066)



# Reports referenced



- ICANN resource on name collision
  - <https://www.icann.org/resources/pages/name-collision-2013-12-06-en>
- JAS Advisors report
  - <https://www.icann.org/en/system/files/files/name-collision-mitigation-study-06jun14-en.pdf>
- Relevant SSAC report
  - <https://www.icann.org/resources/pages/documents-2012-02-25-en>



# What is TLD Universal Acceptance



- A TLD is a top level domain in the Domain Name System
  - Such as “com.” and this definition is extended to domains like “ip6.arpa.”, “co.uk.”, “ad.jp.” and “edu.br.”
- New TLDs sometimes appear “broken” to users
  - Such as “xn--unup4y.” (游戏.) or “uno.”
- Universal Acceptance means – no ‘false positive’ rejections



# Why talk about this now?



- 1980s-90s: fewer TLDs; most ended in either a 2-letter country code (ccTLDs) or consisted of 3 ASCII letters (gTLDs)
- 2000s: new ASCII gTLDs longer than 3 letters introduced (e.g. .info, .museum)
- 2010: non-ASCII ccTLDs launched (e.g. .சிங்கப்பூர், .مليسيا.)
- 2012: New gTLD Program = expanded Domain Name System consisting of 1000s of new gTLDs (including new non-ASCII gTLDs)



# Scope



- Universal Acceptance is concerned with eliminating bugs or errors, that is, unintended name blocking
  - Existing software packages often “screen out” domain names ending with more than 3 characters, or that are in non-ASCII scripts
  - Not an ICANN-specific problem – cooperation/coordination across software & website developers, vendors, registry operators etc.
- Universal Acceptance is not addressing administrative prohibition of names



# Consequence



- New TLDs are not as useful as they could or should be
- Customer communities relying on non-Latin scripts continue to be disadvantaged
- Ultimately slower growth of the Internet



# How ISPs are involved



- It was once said, erroneously, “ISPs have to stop blocking new TLDs”
  - But we know that a TLD is not part of an internet address (IPv4/IPv6) nor a route advertisement
  - I.e., ISPs don’t “filter” TLDs
- However, there may be some services run by an ISP that inadvertently limit new TLDs



# Popular Application Services of ISPs



- E-mail
  - Delivery, spam filtering and e-mail management
- HTTP
  - Web Proxy and account management
- DNS
  - NXDomain Re-writing, hosting and hosting management



# E-Mail



- TLDs determine valid domain names
  - When users configure their accounts
  - When mail is judged as spam or not
- Restrictions on characters in names
  - Expansion of written scripts
  - Email names (mailboxes) matching TLD languages are needed, as well as email content
- Faulty e-mail is a primary concern to many “non-Latin script” writers



# HTTP



- User-typed strings (into browser) that are valid URLs should be treated as such
  - Some new TLDs are converted to search strings
- If ISP hosts HTTP services, customer needs to be able to use any name and any written script
  - Even if the script is not local to the ISP's region



# DNS



- DNS servers are able to handle new TLDs and new scripts
- But troubles have been seen in the management software around DNS
  - User Interfaces often times try to “help” users avoid errors, but with “bad” guidelines
  - NXDomain-rewrite software may base decisions on the TLD sought after a name returns NXDomain



# Where Else Can ISPs (Self) Check?



- Mostly in the non-routing services
  - Don't forget billing!
- TLDs and other Internet identifiers exist “above” the packet passing plane
  - They exist in the “user satisfaction” plane
  - Or in the “account management” plane
- Why does this matter to ISPs?
  - The ISP is the first place a customer calls when there is a problem



# Further Information



- An description of the TLD Universal Acceptance Initiative
  - <http://www.icann.org/en/resources/tld-acceptance>
- An ICANN community wiki
  - <https://community.icann.org/display/TUA/TLD+Universal+Acceptance+Home>



# Review of gTLD WHOIS



- Currently conducting fundamental review of gTLD WHOIS
  - purpose of registration, who uses data, information to be disclosed per users
  - Includes existing gTLDs such as .com, .net
- Background
  - Various issues on WHOIS: privacy, effectiveness for law enforcement, etc.
  - Need for consistent policies, especially with the new gTLD



# Fundamental questions



- Why is WHOIS data collected?
  - What is the purpose of providing data?
  - Who collects data?
  - How long should data be retained?
  - Who needs data for what purpose?
  - Who needs access log for what purpose? ...etc
- SAC055 – WHOIS: Blind Men And An Elephant, p.4
    - <http://www.icann.org/en/groups/ssac/documents/sac-055-en.pdf>



# Current Status



- ICANN Board has set up Expert Working Group to review the current issues and possible measures
- Analysis has been made on
  - Elements for considerations: purpose, data elements, privacy, validation of accuracy, data access, data retention
  - Users and Purposes
- The final report has been submitted to the ICANN Board by Expert Working Group
  - Very preliminary stage of considerations but extensive reviews has been made



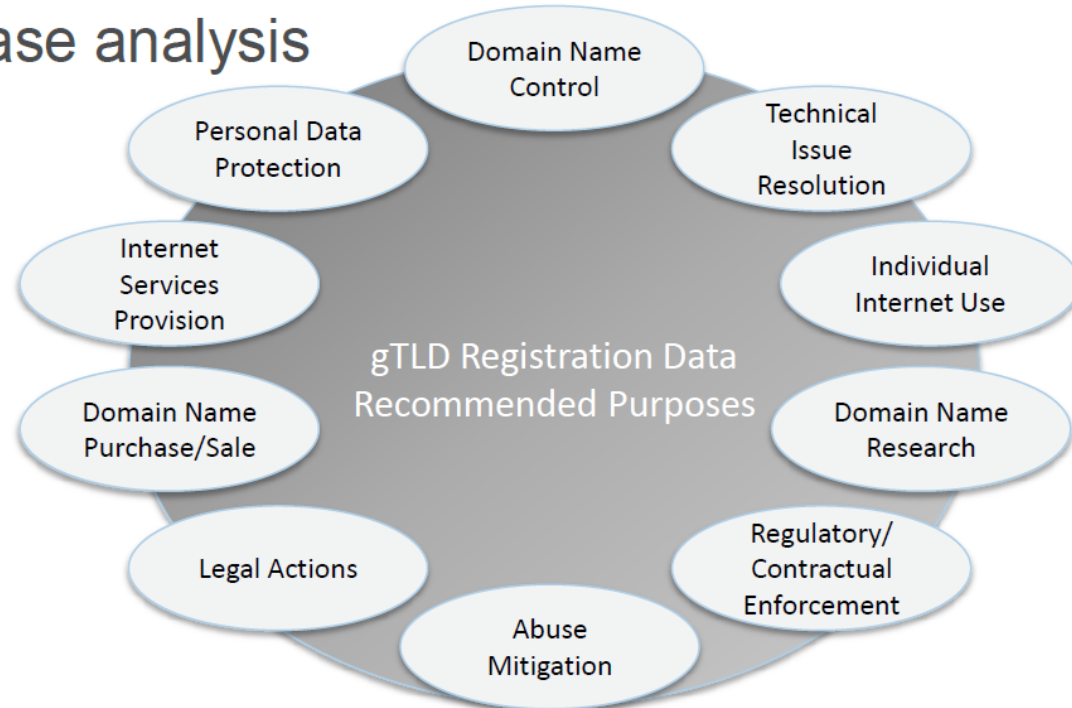
# RDS Users and Purpose

## RDS Users and Purposes

### + Based on use case analysis

#### REGISTRATION DATA USERS

- ✓ All Registrants
- ✓ Protected Registrants
- ✓ Internet Tech Staff
- ✓ On-Line Service Providers
- ✓ Individual Internet Users
- ✓ Business Internet Users
- ✓ Intellectual Property Owners
- ✓ Internet Researchers
- ✓ LEA/OpSec Investigators
- ✓ Non-LEA Investigators
- ☒ Bad Actors





# Example of Registered Information

## Sample RDS Record

Registry or Registrar Source	Registrant Source	Optional Role Based Contacts
Registration Status	Domain Name	Contact Name
DNSSEC Delegation	Name Server	Contact Role
Client Status	Registrant Name	Contact ID
Server Status	Registrant Type	Contact Organization
Registrar	Registrant Contact ID (issued by RDS-accredited Validator)	Contact Street
Reseller	Registrant Organization	Contact City
Registrar Jurisdiction	Registrant Company Identifier	Contact State/Province
Registry Jurisdiction	Registrant Email	Contact Postal Code
Registration Contract Language	Registrant Street	Contact Country
Creation Date	Registrant City	Contact Phone
Original Registration Date	Registrant State/Province	Contact Phone Ext
Registrar Registration Expiration Date	Registrant Postal Code	Contact Email
Updated Date	Registrant Country	Contact Fax
Registrar URL	Registrant Phone	Contact Fax Ext
Registrar IANA Number	Registrant Phone Ext	Contact SMS
Registrar Abuse Contact Email	Registrant Fax	
Registrar Abuse Contact Phone	Registrant Fax Ext	
URL of the Internic Complaint Site	Registrant SMS	

Green = Information Not to become public

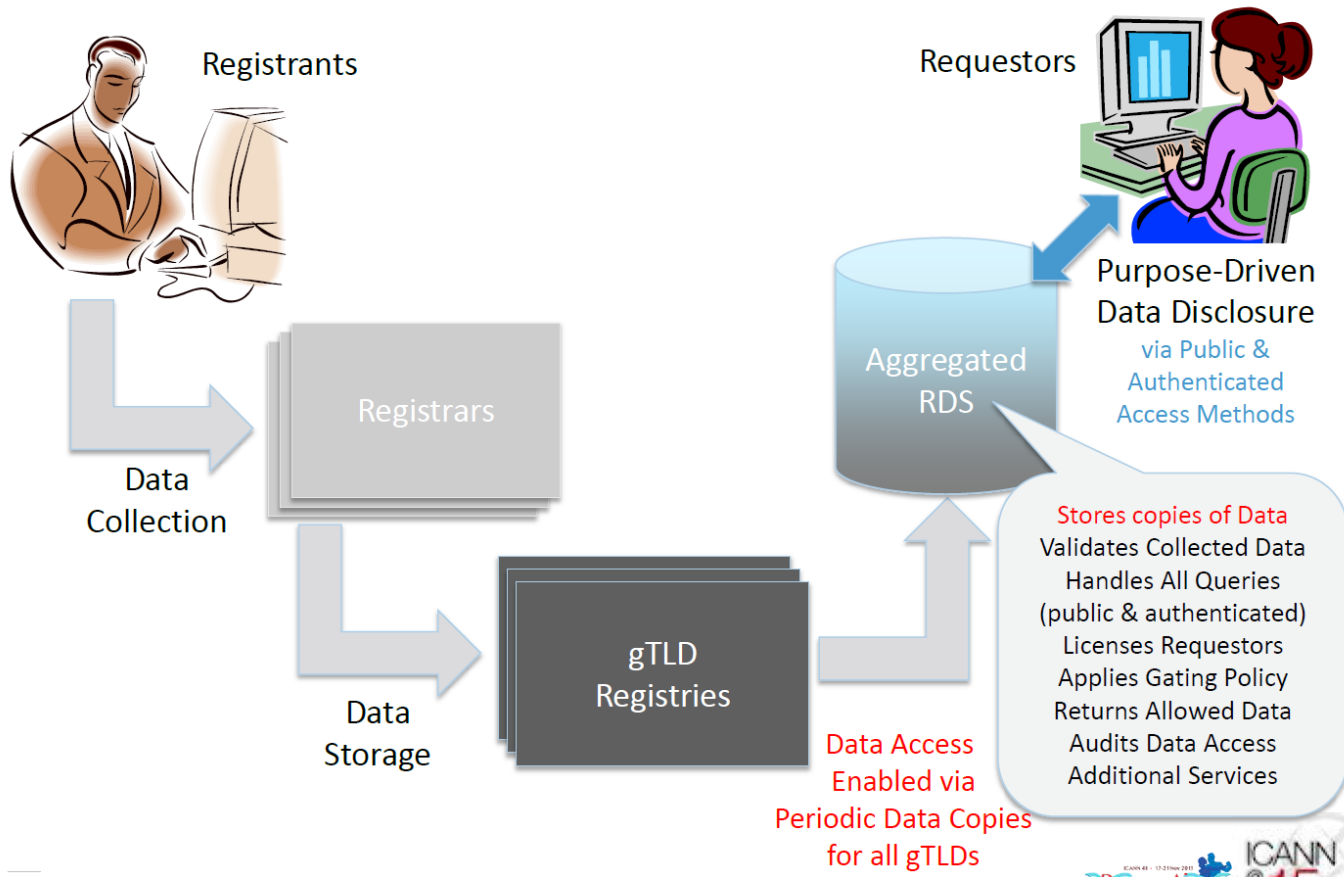
Grey = Not mandatory

Validation of registered information is under considerations



# Aggregated RDS Model

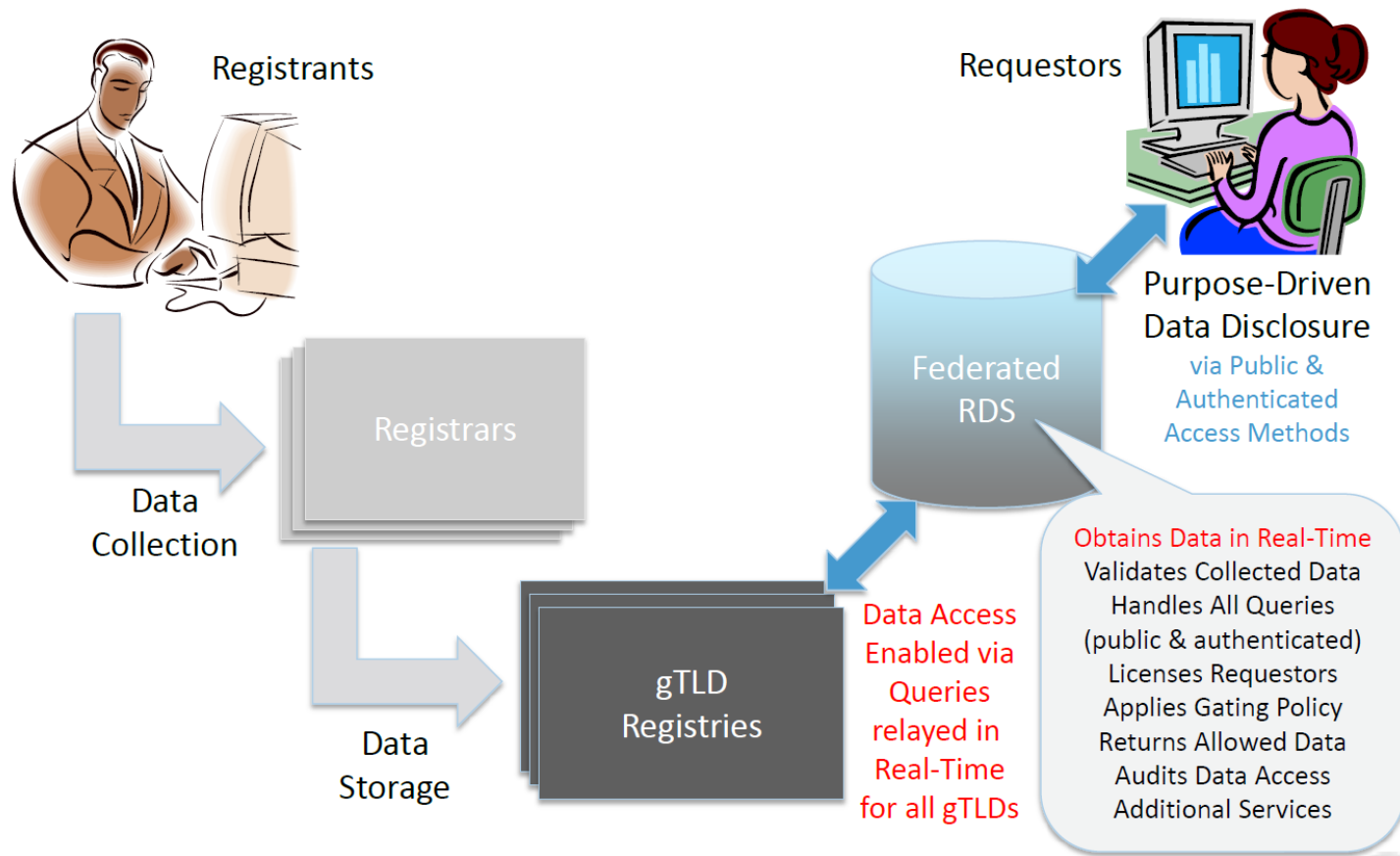
## Aggregated RDS (ARDS)





# Federated RDS Model

## Federated RDS



An option added after ICANN Durban  
The final report recommends Aggregated model



# The IANA Functions



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.



# What are the IANA Functions?



**The IANA functions involve the coordination of unique Internet identifiers, including:**

- Maintenance of the protocol parameter registries on behalf of the IETF
- Allocation of Internet Numbers in cooperation with the Regional Internet Registries
- Management of the .ARPA and .INT domains
- Administrative responsibilities of the DNS root zone
- Coordination of root zone management



# IANA Functions' Stewardship Transition



## **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>.



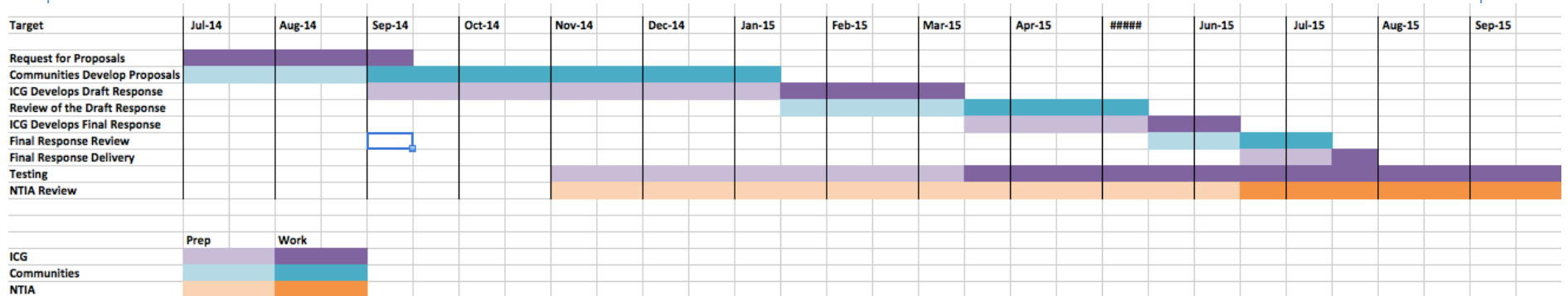
# The U.S. Government's Announcement



- 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 US
- 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



- <https://www.icann.org/en/system/files/files/icg-process-timeline-graphic-10sep14-en.xlsx>





# Questions



- ICANN
- The role of the ISPCP
- The importance of Internet Governance
- Name Collisions
- Universal Acceptance
- WHOIS
- The IANA transition
- Why you should join the ISPCP



# Thank you



Contact Christian Dawson  
[dawson@i2coalition.com](mailto:dawson@i2coalition.com)

Contact Jennifer Taylor  
[Jennifer.taylor@bt.com](mailto:Jennifer.taylor@bt.com)

- Visit [ISPCP.INFO](http://ISPCP.INFO)