

Introduction to PTI for the GWG

Kim Davies

VP, IANA Services; President, PTI

PTI | An ICANN Affiliate

Three years ago

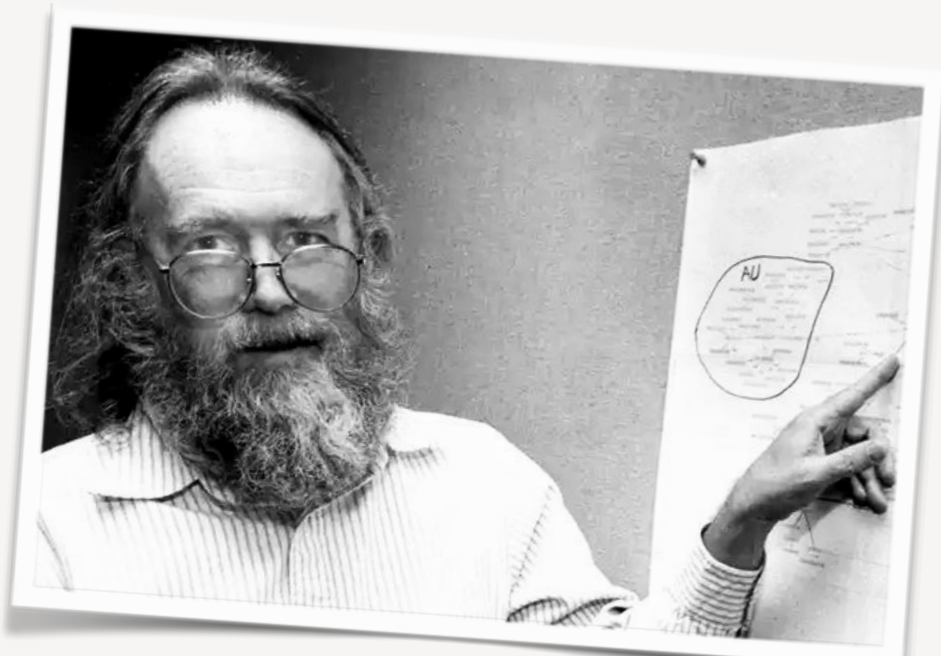
- From 2000 until 2016, ICANN performed the IANA functions under a contract with the US Government
 - Prior to ICANN, IANA functions were activities under other US Government programs
- The **IANA stewardship transition** ended that contractual oversight role and replaced it with a model where the ICANN community oversees the functions
- The formal model the community designed creates a new non-profit that operates the IANA functions called **Public Technical Identifiers** (PTI), a backronym for *post-transition IANA*.

12am 1 October 2016
The IANA contract ends

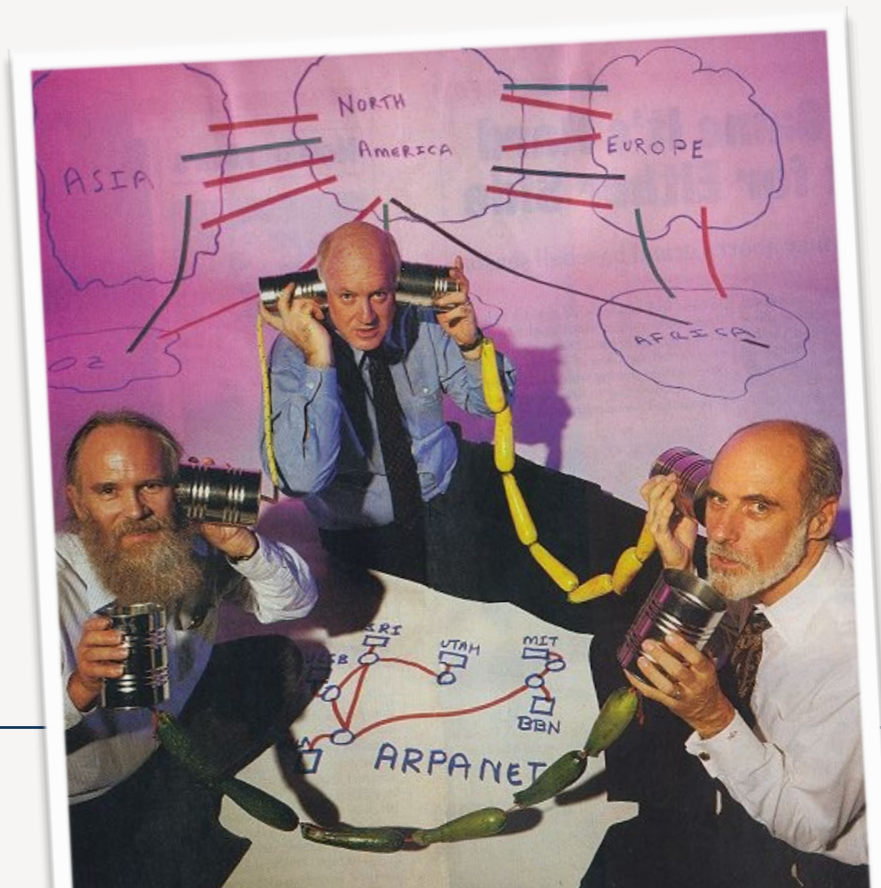


What are the IANA functions?

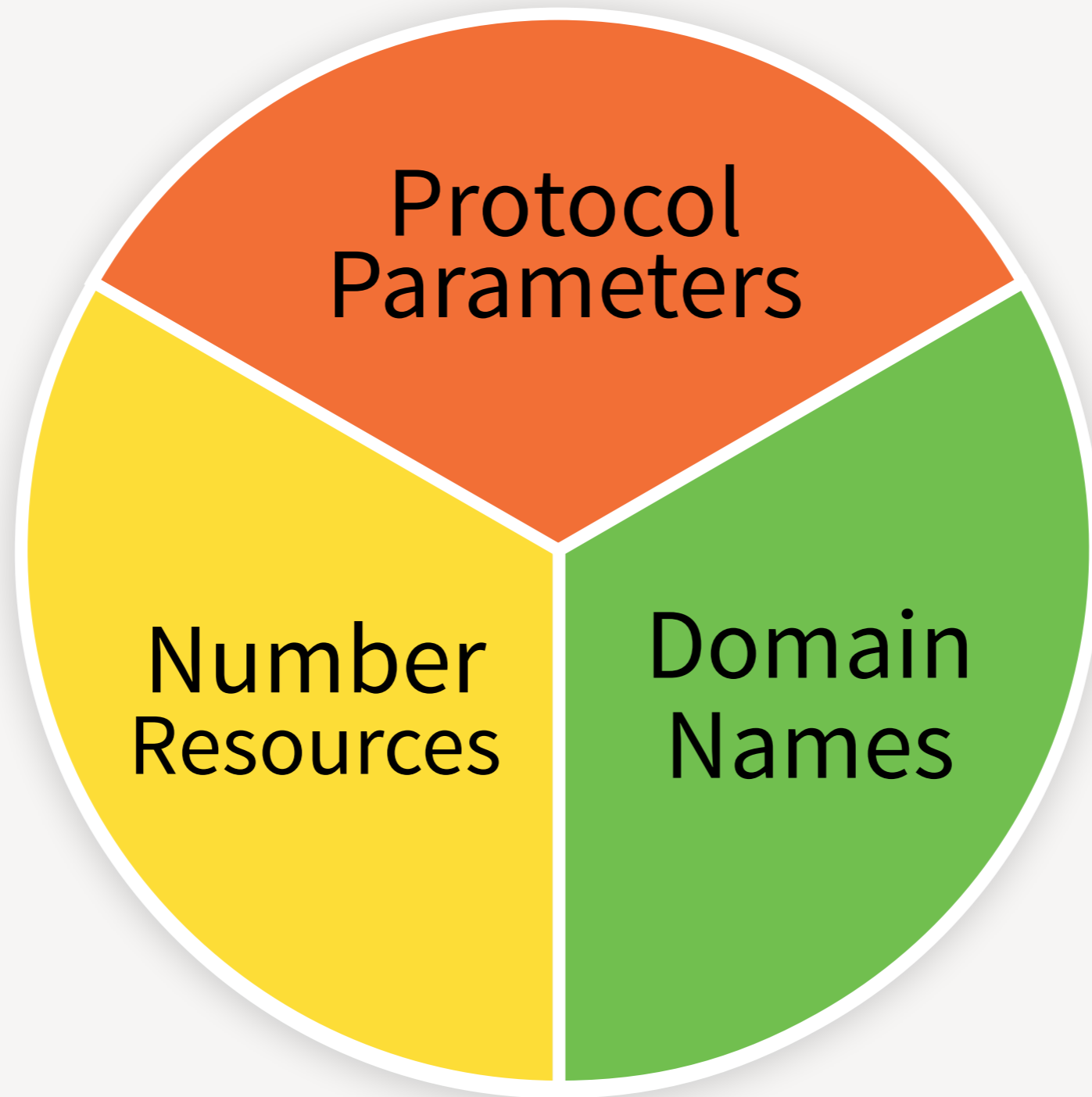
- The record keeper for the unique names and numbers used by Internet technologies to interoperate
- The IANA functions pre-date ICANN. In 1998, ICANN was established to be the home of the IANA functions
- The unique identifiers include protocol parameters, Internet numbers and domain names
- The IANA team maintains these records according to policies adopted by Internet names, numbers and protocol standards communities

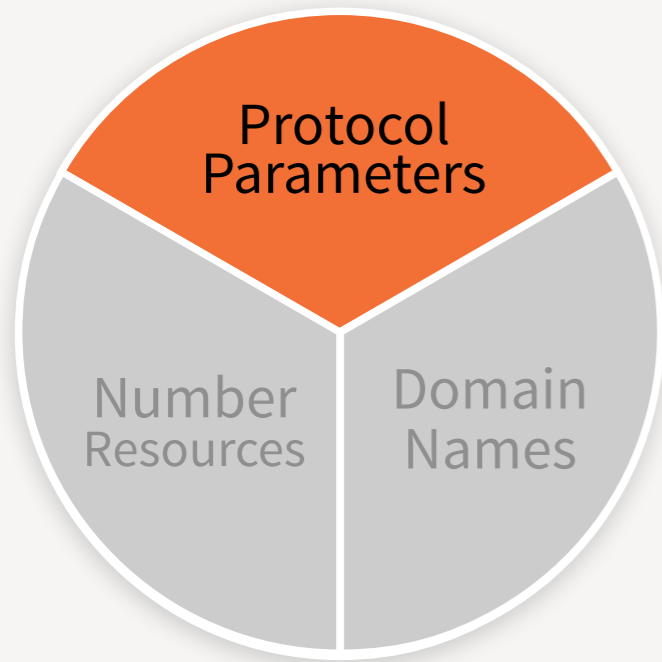


Jon Postel (L) started the IANA; with Steve Crocker and Vint Cerf (R)

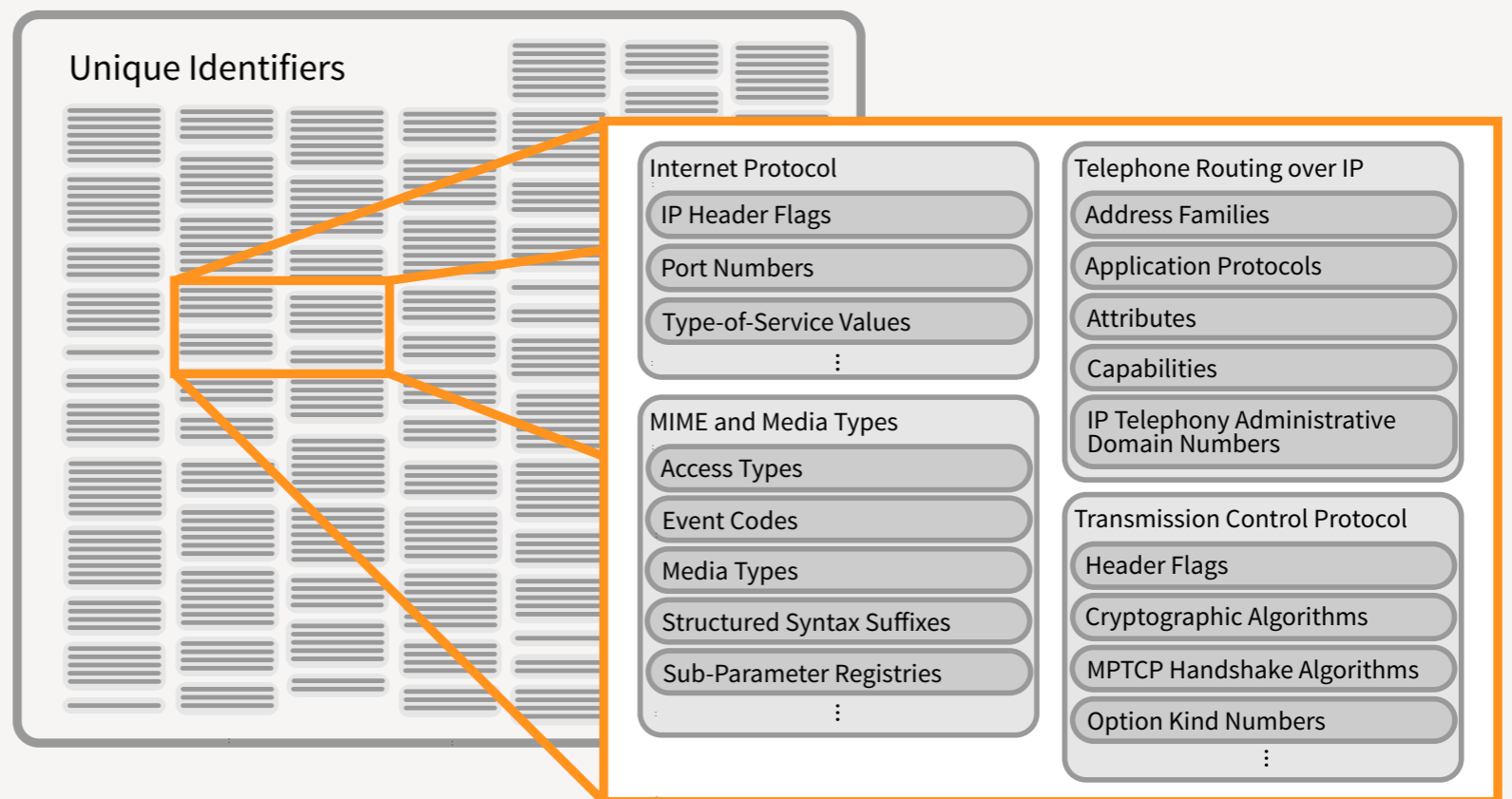


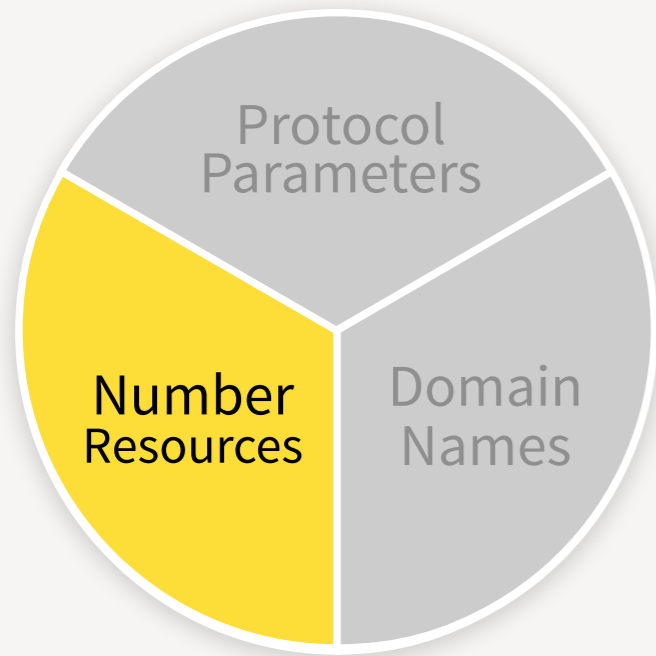
The core IANA functions areas





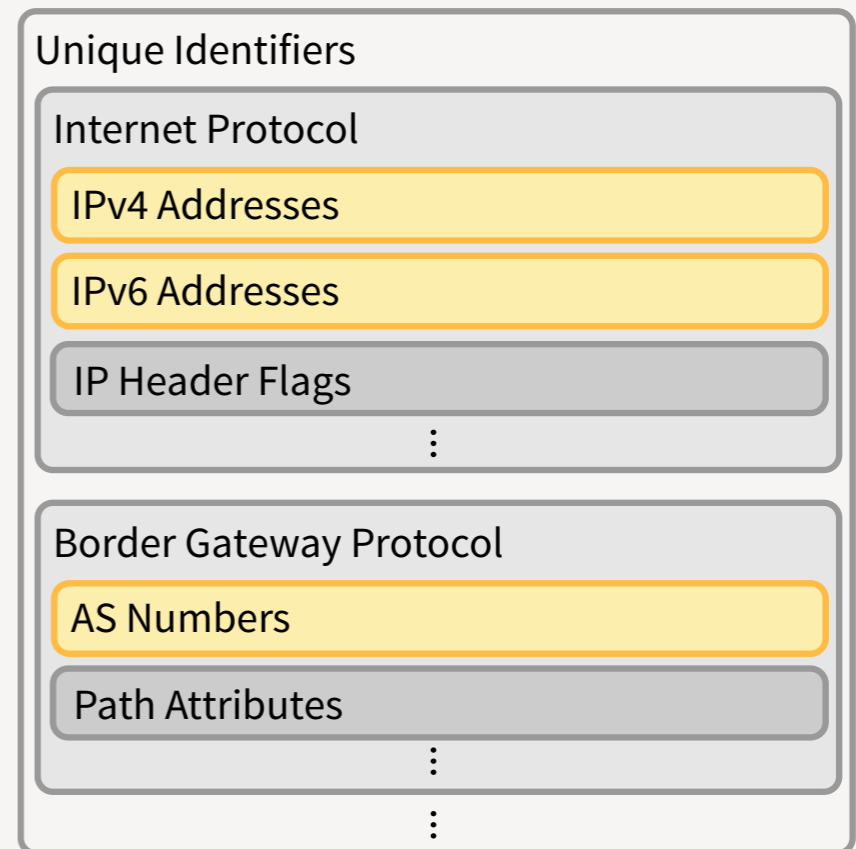
- **Protocol Parameters** are used everywhere and are directly issued by IANA. Rules differ for the qualifying criteria for each type. Applications are evaluated by IANA according to the set criteria.
- Most protocol parameters' visibility is limited to software implementors (i.e. inside software code).

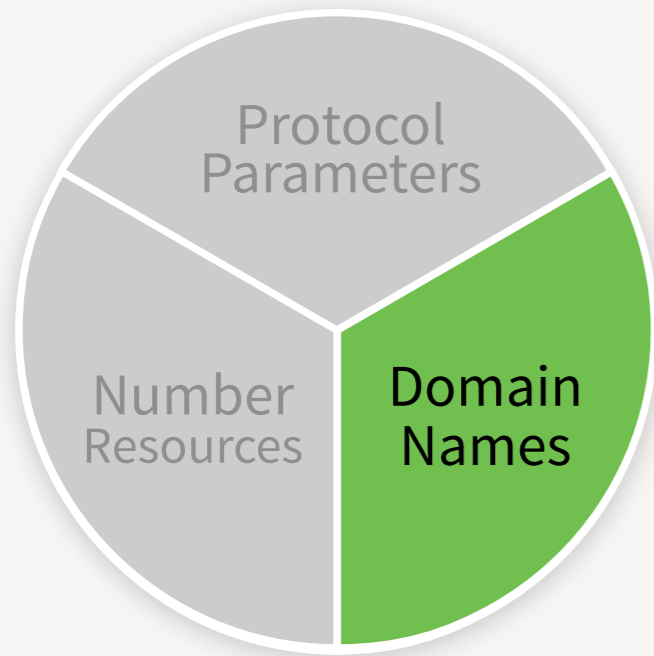




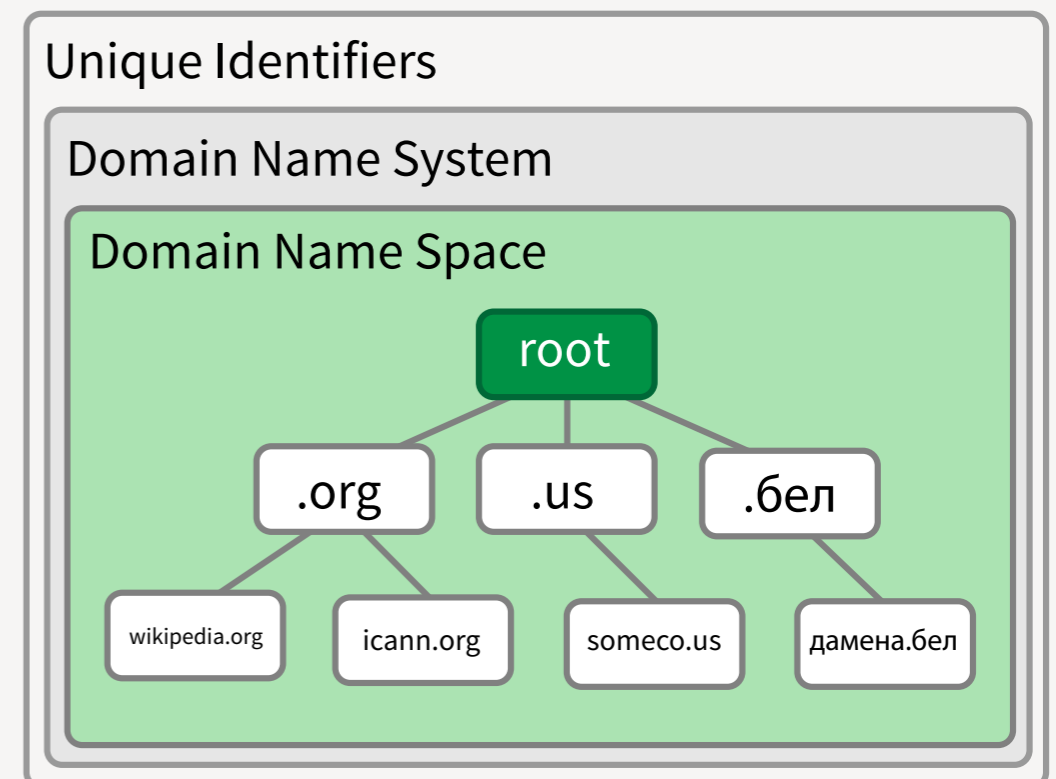
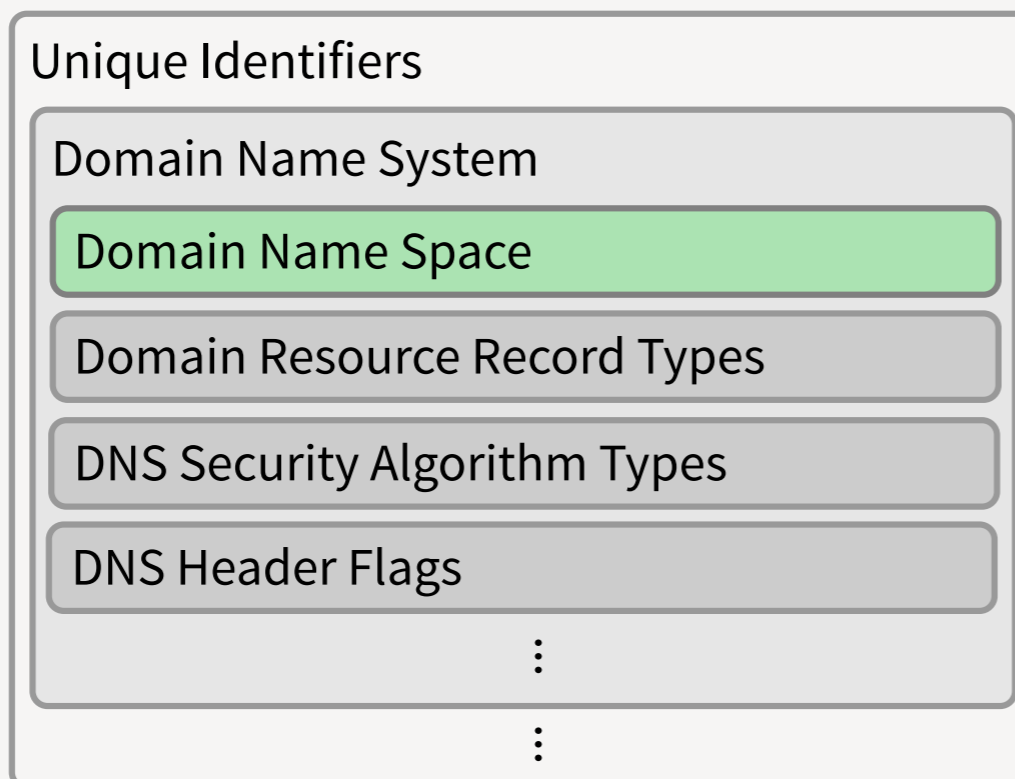
Number Resources are specialized forms of protocol parameters:

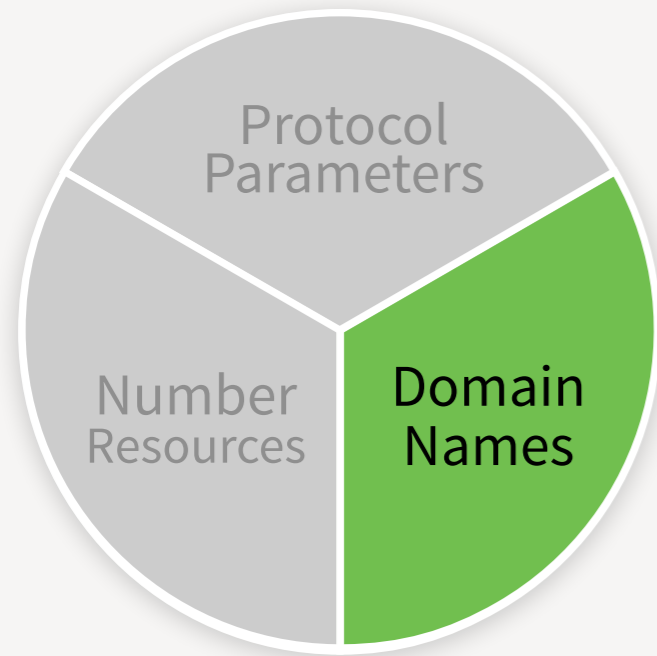
- IP Addresses: unique identifiers for devices on the Internet
- Autonomous System (AS) numbers: unique identifiers that group networks on the Internet



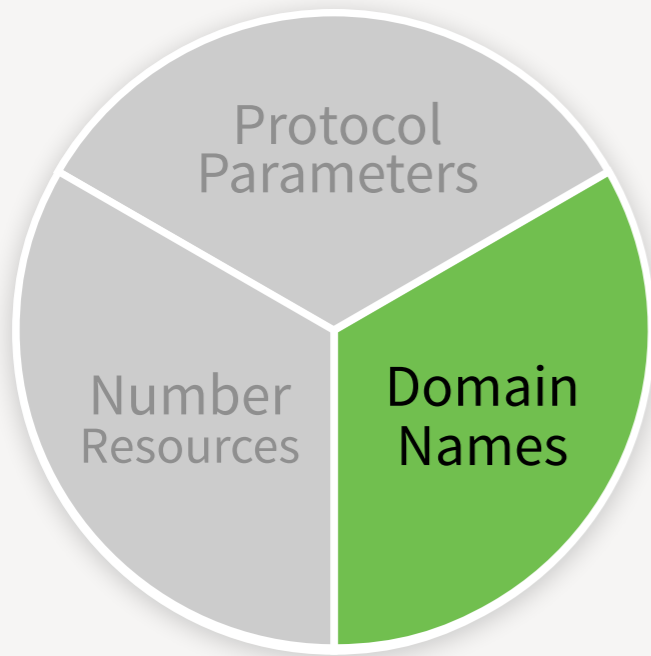


- Most notable IANA function is managing the DNS root zone, which defines top-level domains
- Like number resources, the domain name space is hierarchically delegated, with IANA responsible for the upper-most level of allocations

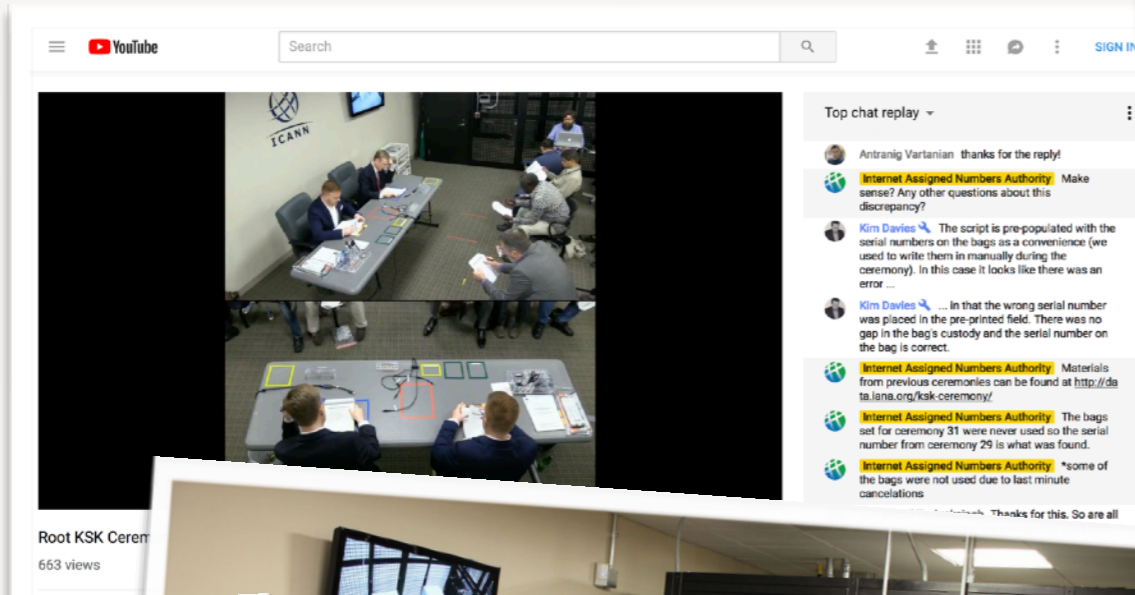




- The IANA tasks include:
 - Receiving and evaluating root zone changes requests against policies and operational requirements:
 - Assignment and transfer of TLDs
 - Routine maintenance of name servers and other technical elements
 - Points of Contact
 - Transmitting vetted changes for implementation in the root zone and root servers
 - Operating the .INT domain for intergovernmental treaty organizations
 - IDN table/LGR repository maintenance



- Managing the trust anchor for the DNS (the “Root Zone Key Signing Key”)
 - Using the key happens in public “key signing ceremonies”, involving trusted community representatives and other oversight.
 - Includes managing the lifecycle of the key, including when it is replaced (a “rollover”)



Root KSK Ceremony 34

This DNSSEC key signing ceremony is planned for
15 August 2018, 2000 UTC

Location

Root Zone Key Management Facility West
El Segundo, California, USA

Ceremony Start

2018-08-15 20:00:00 UTC
Wednesday 15 August 2018, 1 p.m. (local time at facility)

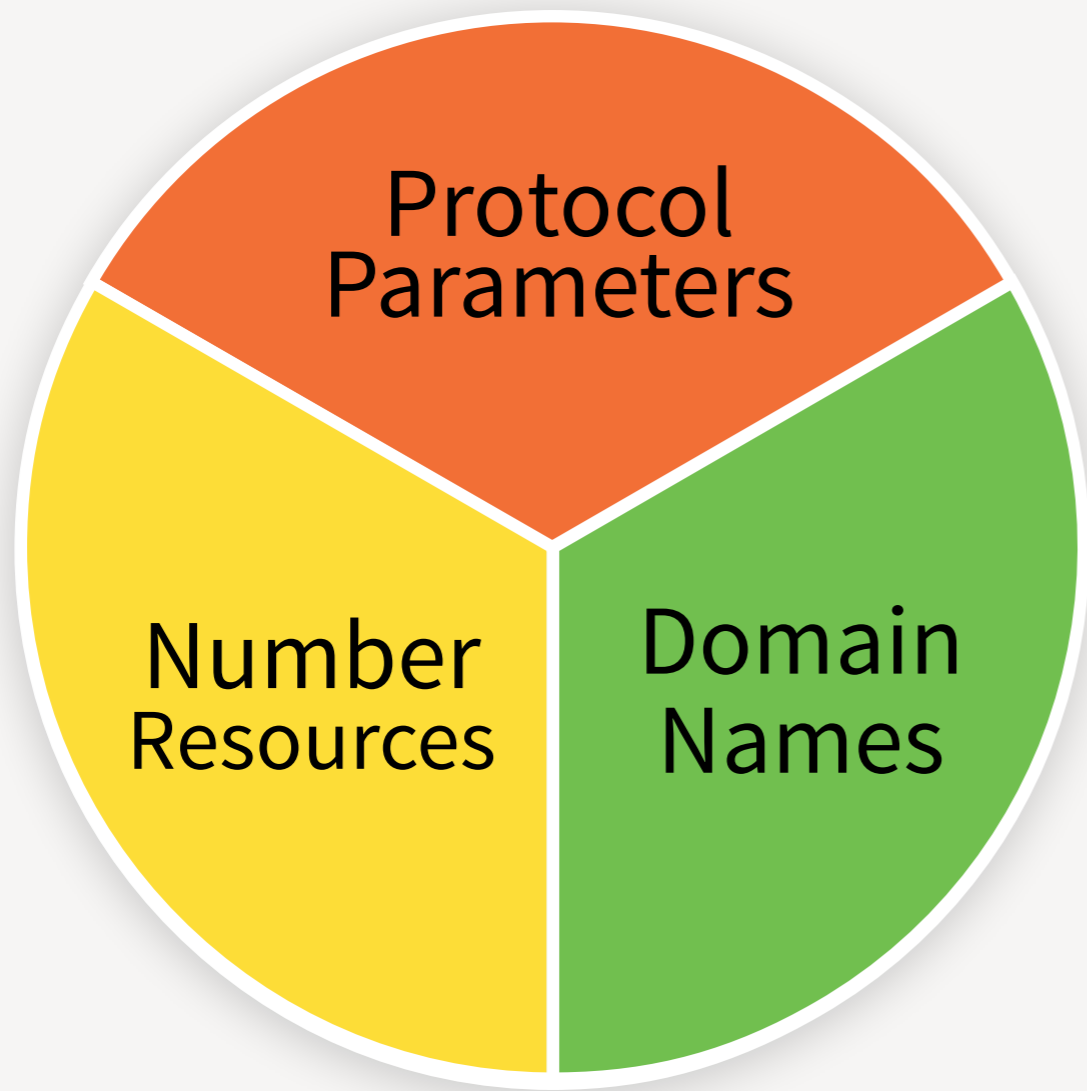
Objectives

Sign the ZSK for 2018Q4

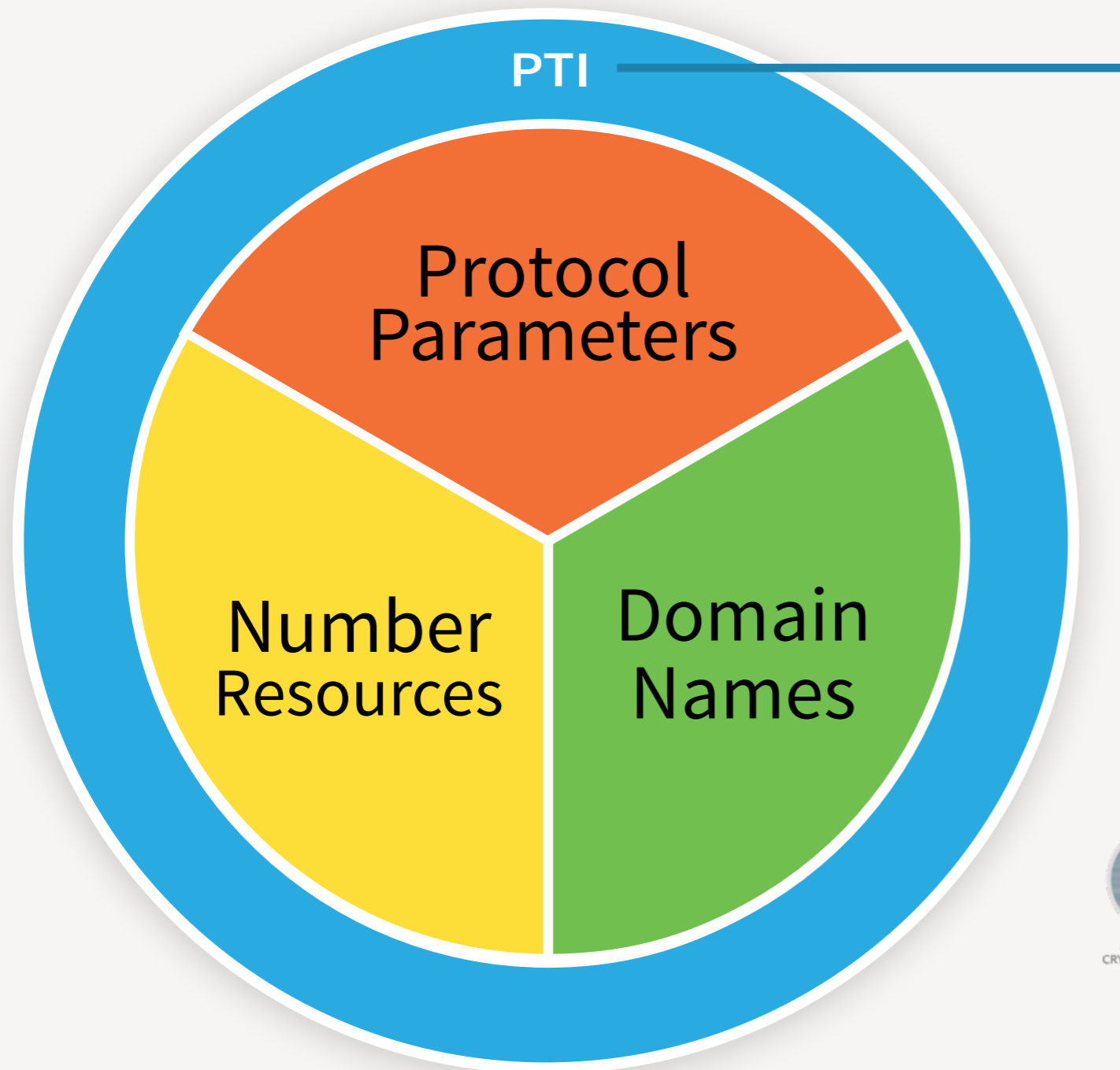
Observing the ceremony

The key signing ceremony is a public event, and you are welcome to observe. Due to space only a small number of persons are able to participate as observers at a ceremony in person. We broadcast ceremonies as they happen, and will provide recordings after the ceremony is complete. Prior to observing a ceremony, we recommend you review the ceremony materials (i.e. the ceremony script) in advance.





- Together, protocol parameters, number resources and domain names comprise the IANA functions
- These divisions also represent the three different accountability mechanisms for these functions



Public Technical Identifiers

- Performs the IANA functions
- Hires the IANA staff
- Is a non-profit organization created in 2016
- ICANN is its sole member (i.e. affiliate of ICANN)



Alan Akahoshi
PRODUCT MANAGER



Shaunte Anderson
AUDIT



Amanda Baber
REQUEST SPECIALIST



Michelle Cotton
IETF RELATIONS



Kim Davies
PRESIDENT



Aaron Foley
CRYPTO OPERATIONS



Selina Harrington
REQUEST SPECIALIST



Marilia Hirano
PROGRAM MANAGER



Jennifer Johnson
PROJECT COORDINATOR



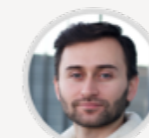
Ali Mohammadi
SOFTWARE



Andres Pavez
CRYPTO OPERATIONS



Seman Said
SOFTWARE



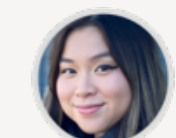
George Sarkisyan
REQUEST SPECIALIST



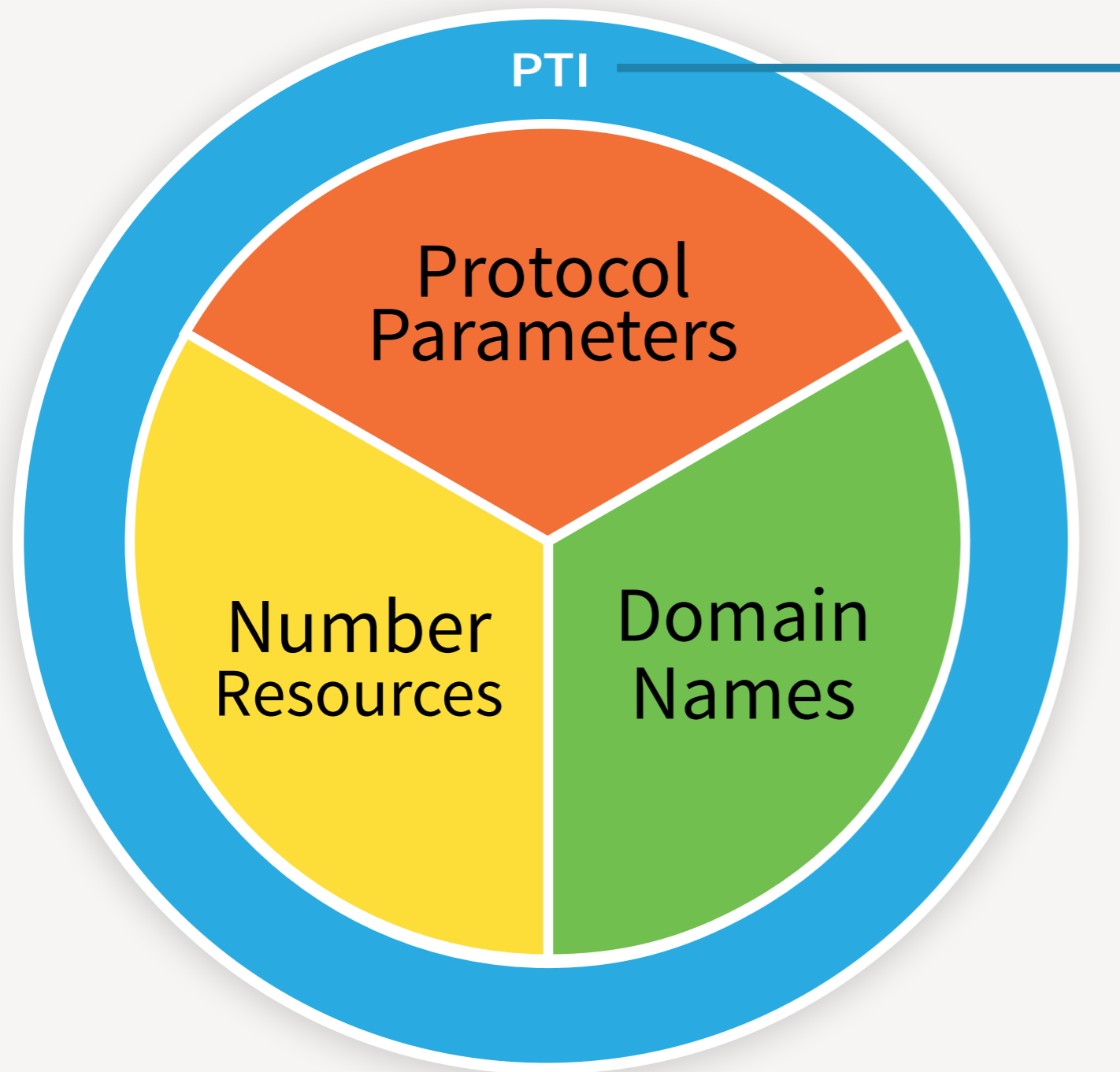
Naela Sarras
OPERATIONS DIRECTOR



Sabrina Tanamal
REQUEST SPECIALIST



Michelle Thangtamsatid
REQUEST SPECIALIST



Public Technical Identifiers

- Five-member board of directors including 2 Nomcom appointees



Lise Fuhr
CHAIR
NOMCOM APPTTEE



Wei Wang
NOMCOM APPTTEE



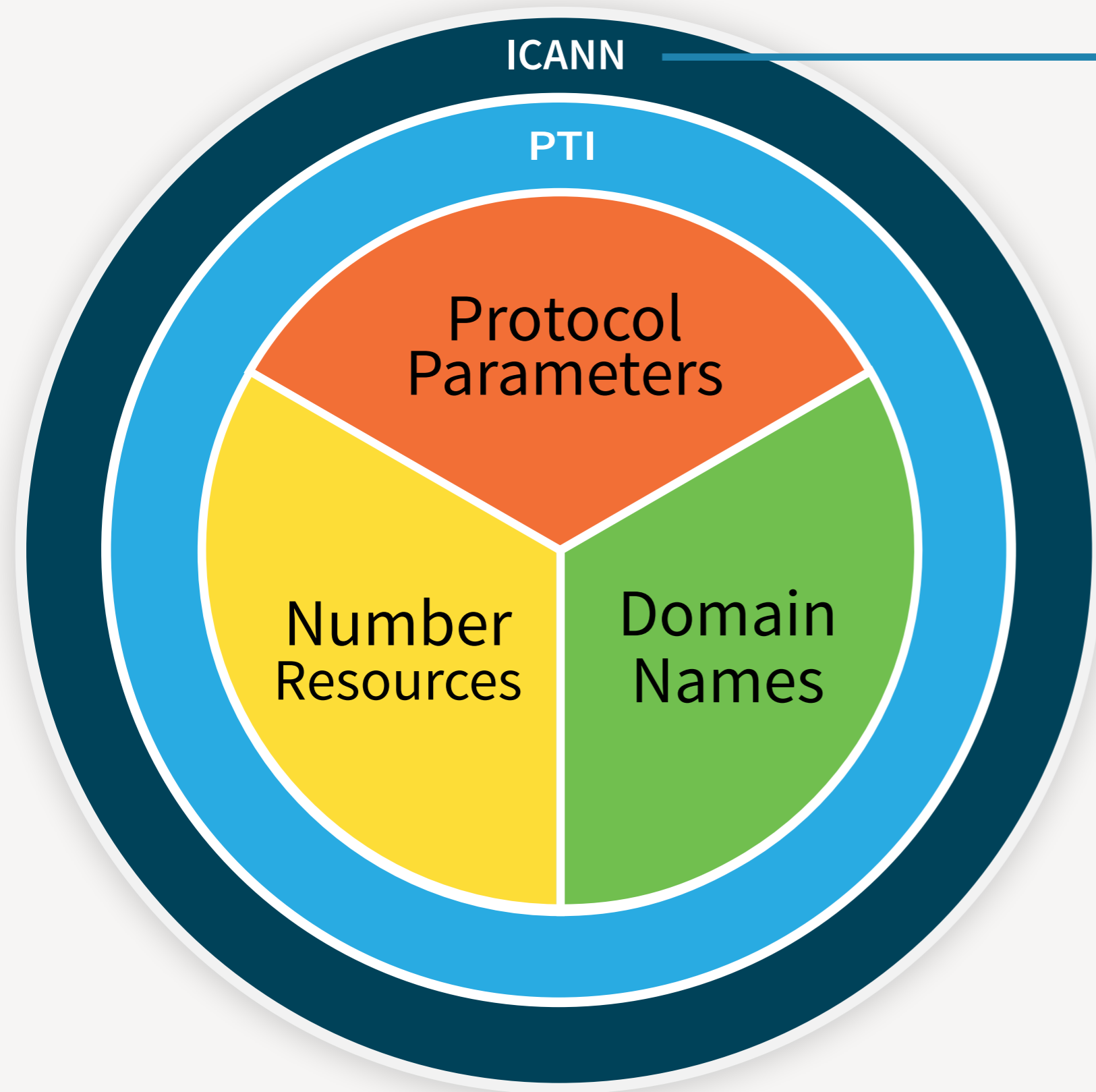
Kim Davies
PTI PRESIDENT



David Conrad
ICANN CTO



Jia-Rong Low
ICANN VP, APAC

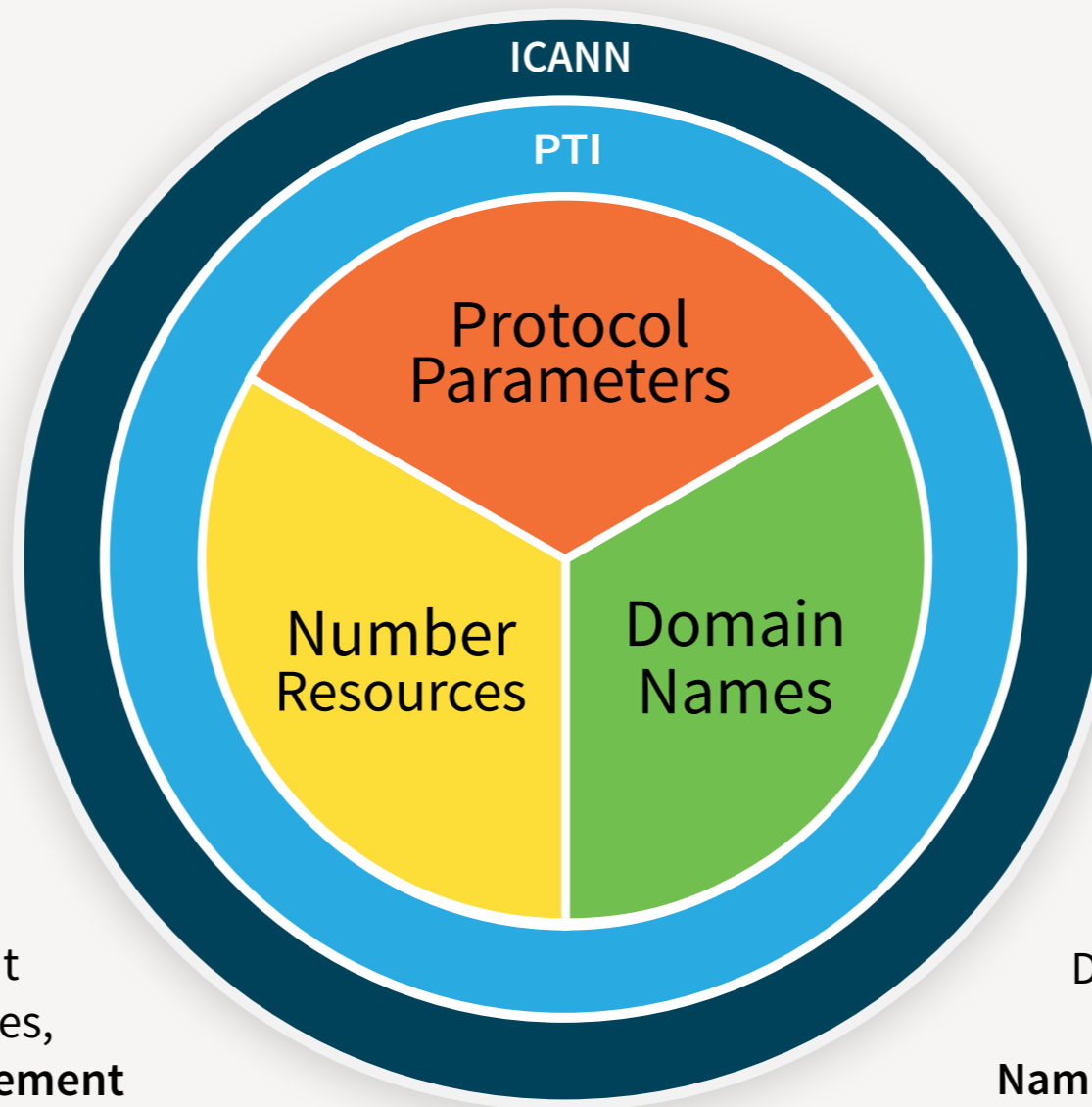


ICANN

- Responsible for the IANA functions
- Contracts PTI to perform the IANA functions
- Oversees PTI's performance
- Provides shared and dedicated resources (Legal, IT, HR, Finance and many others)
- Provides all funding to PTI
- Operates additional accountability mechanisms such as Customer Standing Committee, IANA Naming Function Reviews

Accountability

Protocol Parameter oversight
through **Memorandum of Understanding**
between **IETF** and **ICANN**,
subcontracted from **ICANN** to **PTI**



Number resource oversight
by Regional Internet Registries,
governed by **Service Level Agreement**
between **ICANN** and **RIRs**,
subcontracted from **ICANN** to **PTI**

Domain Name oversight by **ICANN**;
governed by
Naming Contract between **ICANN** and **PTI**;
performance oversight by
ICANN Customer Standing Committee

Performance Reporting

- Monthly reporting for each of the three areas

IANA Protocol Parameter Service
Monthly Report
October 15, 2019

For the Reporting Period of
September 1, 2019 – September 30, 2019

Prepared by: Amanda Baber
amanda.baber@iana.org

Executive Summary
Statistics
IESG approved documents (a)
Reference Updates (b)
Last Calls (c)
Evaluations (d)
Media (MIME) type requests (e, f)
New Port number requests (g)
Modification to and/or deletions of Port number requests (h)
New Private Enterprise Number (PEN) requests (i)
Modifications to and/or deletions of PEN requests (j)
New TRIP/ITAD Numbers (k)
Requests relating to other IETF-created registries for which the request rate is more than five per month (l)
Deliverables
Provide publicly accessible, clear and accurate periodic statistics
Track and publicly report on a monthly basis (monthly report)
Conclusions

Executive Summary
This monthly report provides statistical information of the IANA Services operations as they relate to the IETF. Also included are the deliverables for this reporting period in accordance with the Supplemental Agreement (SLA) between ICANN and the IAOC with the effective date 31 July 2019.
For this reporting period, we completed 90 of 90 requests within the IANA Services processing goal times (100%).

Protocol Parameters

Number Resource Performance June 2019

Performance Summary

These performance targets are derived from section 4.3 of the Service Level Agreement for the IANA Numbering Services for the allocation of unicast IP addresses and AS numbers to the five Regional Internet Registries.

- Requests acknowledged on time (100%)
- Responded on time (100%)
- Implemented on time (100%)
- Implemented accurately (100%)

Individual Requests to Regional Internet Registries

Date	Request Type	Request Processing Details
2019-05-13	IPv6 Unicast	<ul style="list-style-type: none">Responded on time (0.3 days)Implemented on time (0.2 days)Clarification asked on time (2.1 days)Accurately implemented
2019-06-11	AS Number	<p>2019-06-11 01:42:36 Request received from APNIC</p> <p>0.6 business days</p> <p>2019-06-11 15:12:36 Request acknowledged</p> <p>Acknowledged on time (within 2 business days)</p> <p>0.6 business days</p> <p>2019-06-12 18:03:29 Implemented using resource(s)</p> <p>Implemented on time (within 4 business days)</p> <p>Implemented accurately</p>

Number Resources

Summary of Performance

Metric	Category	Expected	Actual	Detail
Submission				
Acceptance Recognition	Routine (Technical)	≤60s (95.0%)	✓ 1.62s	p5
Acceptance Recognition	Routine (Non-Technical)	≤60s (95.0%)	✓ 1.38s	p5
Acceptance Recognition	gTLD Creation/Transfer	≤60s (95.0%)	✓ 1.06s	p6
Acceptance Recognition	ccTLD Creation/Transfer	≤60s (95.0%)	✓ 0.85s	p6
Acceptance Recognition	Other Changes	≤60s (95.0%)	✓ 0.66s	p6
Manual Lodgment Time	Routine (Technical)	≤3d (95.0%)	✓ 0.18d	p7
Manual Lodgment Time	Routine (Non-Technical)	≤3d (95.0%)	✓ 0.55d	p7
Manual Lodgment Time	gTLD Creation/Transfer	≤3d (95.0%)	✓ 0.47d	p7
Manual Lodgment Time	ccTLD Creation/Transfer	≤3d (95.0%)	✓ 0.47d	p8
Manual Lodgment Time	Other Changes	≤3d (95.0%)	✓ 0.03d	p8
Technical Checks				
Technical Check (First)	Routine (Technical)	≤50m (95.0%)	✓ 0.47m	p9
Technical Check (First)	gTLD Creation/Transfer	≤50m (95.0%)	✓ 0.15m	p9
Technical Check (First)	ccTLD Creation/Transfer	≤50m (95.0%)	✓ 0.2m	p9
Technical Check (First)	Other Changes	≤50m (95.0%)	✓ 5.16m	p10
Technical Check (Retest)	Routine (Technical)	≤10m (95.0%)	✓ 1.47m	p10
Technical Check (Retest)	gTLD Creation/Transfer	≤10m (95.0%)	✓ 0.17m	p11
Technical Check (Retest)	ccTLD Creation/Transfer	≤10m (95.0%)	✓ 0.17m	p11
Technical Check (Retest)	Other Changes	≤10m (95.0%)	✓ 0.44m	p11
Technical Check (Supplemental)	Routine (Technical)	≤10m (95.0%)	✓ 0.47m	p12
Technical Check (Supplemental)	gTLD Creation/Transfer	≤10m (95.0%)	✓ 0.16m	p12
Technical Check (Supplemental)	ccTLD Creation/Transfer	≤10m (95.0%)	✓ 0.3m	p12
Technical Check (Supplemental)	Other Changes	≤10m (95.0%)	✓ 0.3m	p13
Contact Confirmations				
Email Dispatch	Routine (Technical)	≤60000ms (95.0%)	✓ 1ms	p13
Email Dispatch	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 3ms	p14
Email Dispatch	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ 1ms	p14
Email Dispatch	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ 1ms	p14
Email Dispatch	Other Changes	≤60000ms (95.0%)	✓ 1ms	p14
Recognition of Confirmation	Routine (Technical)	≤60000ms (95.0%)	✓ 0.8ms	p15
Recognition of Confirmation	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 1ms	p15
Recognition of Confirmation	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0ms	p16
Recognition of Confirmation	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0ms	p16
Recognition of Confirmation	Other Changes	≤60000ms (95.0%)	✓ 0ms	p16
Staff Processing				
Validation and Reviews	Routine (Technical)	≤60000ms (95.0%)	✓ 0.85d	p17
Validation and Reviews	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 1.02d	p17
Validation and Reviews	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0.72d	p17
Validation and Reviews	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ 29.35d	p18
Validation and Reviews	Other Changes	≤60000ms (95.0%)	✓ 3.78d	p18
Third Party Approval			✓ 18.8d	p19
Implementation				
Root Zone Publication			✓ 28.47h	p20
Root Zone Publication			✓ 15.81h	p20
Root Zone Publication			✓ 3.06h	p20
Root Zone Publication			✓ 15.55h	p21
Notification of Completion			✓ 0.27h	p21

Domain Names

Stakeholder Relationships

- Protocol Parameters
 - IETF leadership
 - IETF community
- Number Resources
 - RIR Leadership
 - RIR Communities
- Domain Names
 - Direct customer relationships (TLD managers, etc.)
 - ICANN SOs and ACs (ccNSO, GNSO, ALAC, RSSAC)
 - Customer Standing Committee
 - RZERC
 - IANA Naming Function Reviews
- ICANN

Root Server Relationships

- Individual Root Operators
- RSSAC

Root Server Operational Needs

- Identity verification
- Procedures for authorizing changes to NS configuration (i.e. glue)
- Procedures for authorizing changes to RSO identity
- Baseline requirements IANA needs to test upon change requests
- Processes/procedures around adding/replacing/removing RSOs
- Protocols around fielding general RS-related questions

Thank you!

Website

iana.org

Service level reporting

iana.org/performance

Functional areas

iana.org/protocols

iana.org/numbers

iana.org/domains

More background

iana.org/about

PTI website

pti.icann.org