

CCNSO MEMBERS MEETING

IANA Names Function Update

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PTI | An ICANN Affiliate

Overview

- New DNSSEC algorithm support
- New automated workflows
- Implementing the FOI recommendations
- Root Zone Management System roadmap
- Other development work
- Rolling the Root Zone Key Signing Key
- Performance reporting
- Customer Survey



New DNSSEC algorithm support

- Original suite of algorithms were those supported in 2010 with comprehensive software support.
- New algorithms, particularly associated with elliptic-curve cryptography, are now available.
- Aim is to support new algorithms and digests as mature implementations are available.
- **New algorithms supported in October 2017:**
 - GOST R 34.10-2001
 - ECDSA P-256 SHA-256
 - ECDSA P-384 SHA-384
- **New digest types supported in October 2017:**
 - GOST R 34.11-94
 - SHA-384

Algorithm Types

DSA/SHA-1
RSA/SHA-1
DSA-NSEC3-SHA1
RSASHA1-NSEC3-SHA1
RSA/SHA-256
RSA/SHA-512
GOST R 34.10-2001
ECDSA P-256 SHA-256
ECDSA P-384 SHA-384
EdDSA 25519
EdDSA 448

Digest Types

SHA-1
SHA-256
GOST R 34.11-94
SHA-384



New automated workflows

- Routine change requests have been sent between PTI and Verisign via EPP.
- Three business processes were still manually communicated:
 - Changes to the authorities for the root zone
 - Deletion of a TLD
 - Escalation of a change request to be an “emergency”
- **New support introduced in August 2017:**
 - 100% of interactions communicated via EPP to Verisign (as the Root Zone Maintainer)
 - Meets requirements stipulated in the Root Zone Maintainer Agreement

iana.org/help/rzms-changelog



FOI implementation

- Framework of Interpretation provides guidance that informs how we should implement requests to delegate or transfer (redelegate) ccTLDs.
- Key implementation impacts:
 - Terminology
 - Informed Consent
 - Delegation Contacts

Terminology

- Guidance to replace historical term **Sponsoring Organisation** with **ccTLD Manager**
- In ccTLD-only documentation, terminology has been updated.
- In places also used by gTLDs, generic terminology such as “TLD Manager” is being used.



The screenshot shows the IANA Delegation Record for the .AE domain. At the top is the IANA logo (Internet Assigned Numbers Authority). Below it, the title is "Delegation Record for .AE" with a subtitle "(Country-code top-level domain)". The "ccTLD Manager" is listed as the "Telecommunication Regulatory Authority (TRA)" with the address: P.O. Box 116688, Dubai, United Arab Emirates. The "Administrative Contact" is listed as "Mohammed Ghevath".

TLD Manager

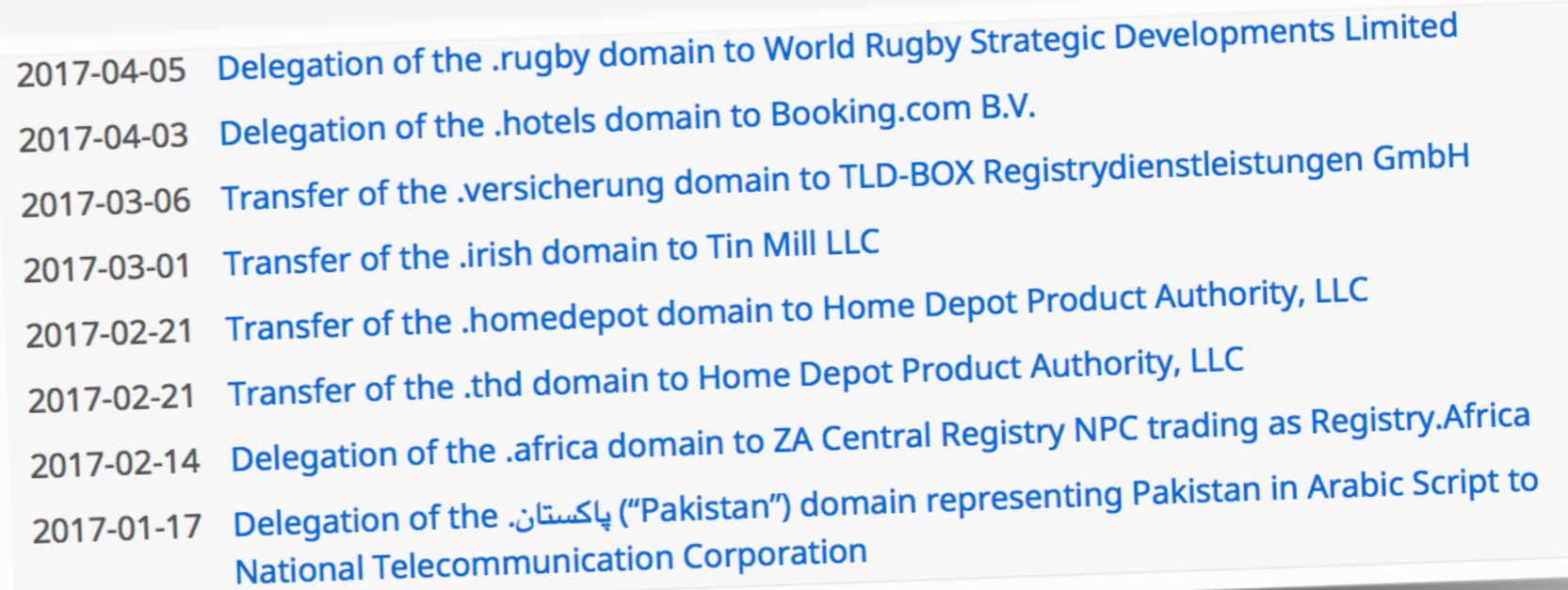
The TLD Manager (Registry Operator) is the legal entity responsible for managing the domain in accordance with the relevant delegation agreements.

Formal legal entity name: Internet Assigned Numbers Authority
Physical address: 12025 Waterfront Drive
Suite 300
Los Angeles CA 90094
United States (US)

Update TLD Manager ►

Terminology

- Guidance to replace historical term **redelegation** with **transfer** with accompanying rules for consent and revocation for cause.
- In documentation, terminology has been updated.
- In our early experience, the term “redelegation” is much more commonly understood in the community and we often have to explain we now must call them transfers.



2017-04-05 Delegation of the .rugby domain to World Rugby Strategic Developments Limited

2017-04-03 Delegation of the .hotels domain to Booking.com B.V.

2017-03-06 Transfer of the .versicherung domain to TLD-BOX Registrydienstleistungen GmbH

2017-03-01 Transfer of the .irish domain to Tin Mill LLC

2017-02-21 Transfer of the .homedepot domain to Home Depot Product Authority, LLC

2017-02-21 Transfer of the .thd domain to Home Depot Product Authority, LLC

2017-02-14 Delegation of the .africa domain to ZA Central Registry NPC trading as Registry.Africa

2017-01-17 Delegation of the .پاکستان (“Pakistan”) domain representing Pakistan in Arabic Script to National Telecommunication Corporation

Informed Consent

3.2. The FOIWG further interprets section 3.6 of RFC1591 regarding *agreement* to the Transfer as requiring that the communication from the IANA Operator requesting a party's consent should clearly state (a) what the party is being asked to agree to and (b) what steps the IANA Operator will or may take in response to the party's (i) affirmative consent, (ii) affirmative refusal to consent, or (iii) failure to respond to the communication requesting consent. The IANA Operator should also advise the Manager to seek legal advice prior to granting consent. The requirement to secure informed consent does not obligate the IANA Operator to ensure that the party from whom consent is sought is informed about consequences not within ICANN or the IANA Operator's control.

- Providing a pro-forma consent form for execution by the current manager.
- Explicitly spells out the requirements derived from the FOI recommendations.

Consent to transfer a ccTLD from incumbent manager

Incumbent Manager
Organisation Name:
Organisation Address:
Top-Level Domain(s) to be transferred:

I hereby confirm (initial each section):

_____ I am a representative of the above named incumbent ccTLD manager, and I am an officer of the organization that is authorized to make these representations on behalf of the organization.

_____ I confirm I am neither the administrative nor technical contact person listed in the IANA Root Zone Database for the top-level domain(s).

_____ I understand that transferring a ccTLD involves undertaking all necessary steps to transfer the incumbent manager's role as trustee for the ccTLD to the proposed manager, including, without limitation, changing the entry in the IANA Root Zone Database.

_____ I understand that following my consent to transfer, if this change request satisfies the other requirements to transfer the domain, the IANA Functions Operator will commence executing this transfer to the proposed manager in accordance with the request submitted.

_____ I understand that prior to the IANA Functions Operator processing the transfer request and establishing the transfer meets requirements under the relevant policies and procedures, I remain the recognized ccTLD manager for the domain(s), and will not materially transfer operations of the domain to the proposed manager beyond any necessary coordination steps to prepare for the proposed transfer.

_____ I understand the IANA Functions Operator is not obligated to inform me of consequences of this transfer outside of its control.

_____ I have considered seeking legal advice prior to granting this consent.

_____ I confirm this consent is freely given, that the incumbent manager has not been coerced, and I provide consent.

Delegation Contact

3.1. The FOIWG interprets section 3.6 of RFC1591 to require that the IANA Operator only seek consent for a Transfer request from the incumbent manager and the proposed manager. The IANA Operator should not seek consent from the Administrative or Technical contacts.

- Implemented in today's manual processes.
- Intend to implement explicitly in next generation RZMS is to allow authorization contacts in the new model to be configured as "delegation contacts" or not. The ccTLD manager is empowered to nominate which of their contacts are allowed to approve transfers.
- Expect to retain additional out-of-band mechanisms to be conducted throughout due diligence process. Transfer approval electronically would be only a component. (See auth model discussion)

Who can authorize transfers to this domain?

A transfer request (formerly known as a redelegation) is the transfer of operational control to a new entity. These are considered critical changes that you may wish to configure differently from the ability to approve other kinds of change requests. [ⓘ Explain](#)

Authorizer

Naela Sarras (naela.sarras@iana.org)

Kim Davies (kim.davies@iana.org)

Able to authorize

Any change request ▾

Transfers only ▾

Routine changes only

Transfers only

Any changes (routine and transfers)

[< Redefine authorizers](#)

[Continue >](#)

Open Issues

- IANA has implemented the recommendations from the ccNSO that has clear guidance
- Waiting on pending implementation issues from the ccNSO:
 - Procedure for how to revoke a ccTLD for cause and keep it operational
 - Appeal mechanism

RZMS Roadmap

Completed



New automated workflows



New DNSSEC algorithm support



FOI implementation

Next: Next-generation re-architecture



New authorization model



New technical check implementation



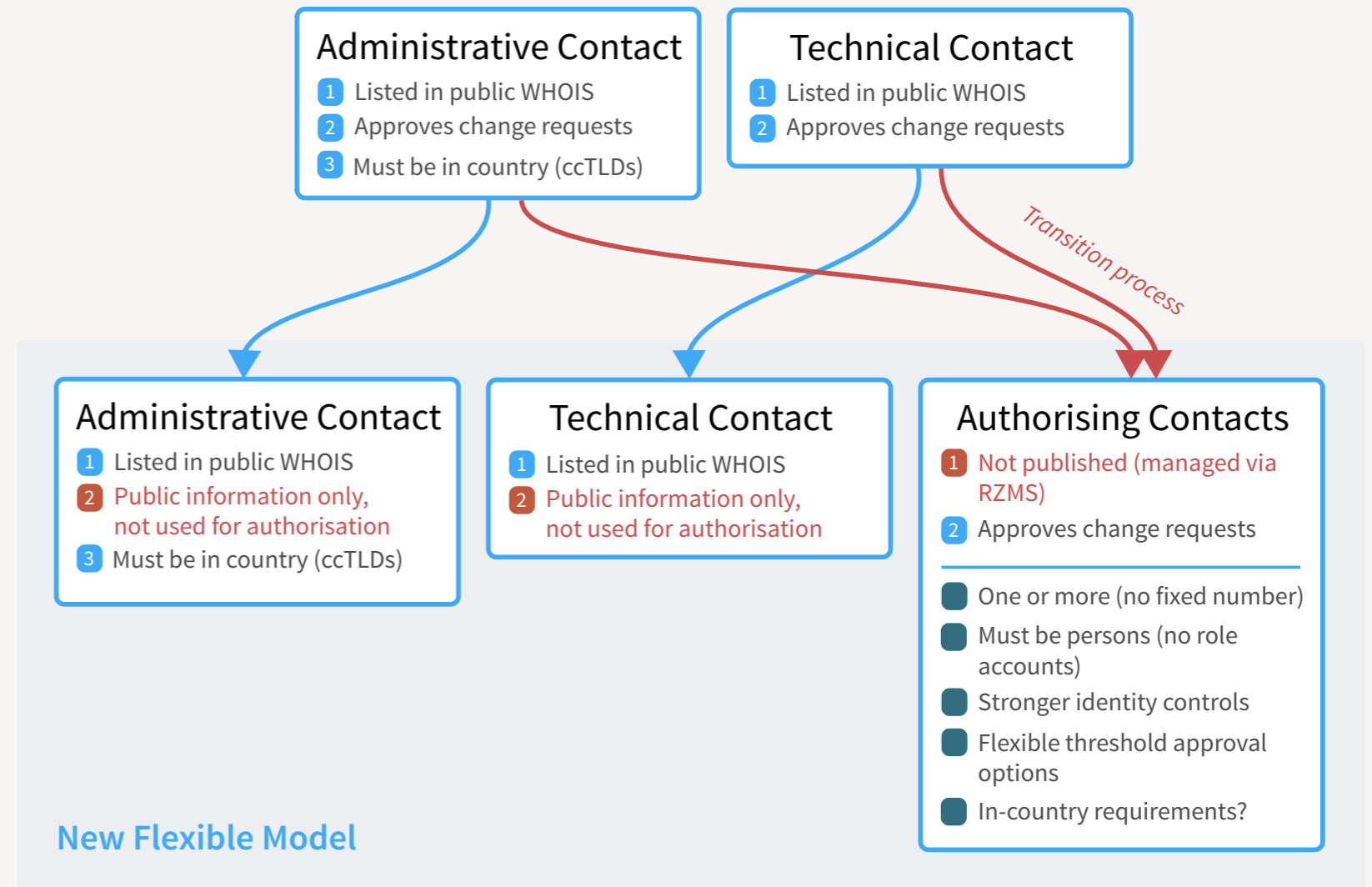
New customer API



New security options

New Authorization Model

- Flexible mechanism for TLD managers to choose who can authorize changes, separated from the contacts that are published in the WHOIS.



Authorization model design considerations

- Migration of existing contacts
 - Role accounts to be replaced with persons
- Granularity of control by contacts
 - How detailed should each contact's access be configured?
 - Balancing complexity against meeting most/all needs
 - API-only accounts?
- In-country requirements from RFC 1591
- Protocol for adding special processing/handling on file

Other development work

- **Other elements of the next-generation RZMS**
 - **New technical check implementation.** Separate technical check logic into a standalone application that provides richer feedback and debugging.
 - **New customer API.** Provide a modern API to allow TLD managers to build systems to interact directly with RZMS, providing new possibilities to reduce error and in particular perform bulk operations.
 - **New security options.** Provide mechanisms for multi-factor authentication, mandatory authentication for authorizing change requests, audit logging and other improvements.
- **Instrumenting our LGR (IDN table) management process**

In cooperation with the customer standing committee, modeling the process for publishing LGR changes and instrumenting our current systems to collect statistics that will ultimately augment the existing Root Zone change request SLAs.

KSK Rollover

- Multi-year process to replace the trust anchor for the DNS for the first time
- Considered sensitive as how software copes with updating the anchor is untested in the real world.
- Our team has generated the new trust anchor and published it.
- Cut-over was planned for 11 October 2017 but has been delayed to study late-breaking telemetry data.
- New cut-over target date to be decided.



iana.org/dnssec

Reporting

PTI produces monthly reports on its performance for the Customer Standing Committee (CSC).

iana.org/performance/csc-reports

The SLE Dashboard provides real-time reporting of performance metrics defined by the naming community for root zone management performance.

sle-dashboard.iana.org

Monthly Performance Report from Public Technical Identifier Customer Standing Committee

February 2017

Summary of Performance

Metric	Category	Expected	Actual	Detail
Submission				
Acceptance Recognition	Routine (Technical)	≤60s (95.0%)	✓ 1.72s	p5
Acceptance Recognition	Routine (Non-Technical)	≤60s (95.0%)	✓ 2.34s	p5
Acceptance Recognition	gTLD Creation/Transfer	≤60s (95.0%)	✓ 1.44s	p6
Acceptance Recognition	ccTLD Creation/Transfer	≤60s (95.0%)	✓ 0.73s	p6
Acceptance Recognition	Other Changes	≤60s (95.0%)	✓ 1.95s	p6
Manual Lodgment Time	Routine (Technical)	≤3d (95.0%)	✓ 0.92d	p7
Manual Lodgment Time	Routine (Non-Technical)	≤3d (95.0%)	✗ 4.07d	p7
Manual Lodgment Time	gTLD Creation/Transfer	≤3d (95.0%)	✓ ---	p8
Manual Lodgment Time	ccTLD Creation/Transfer	≤3d (95.0%)	✗ 3.38d	p8
Manual Lodgment Time	Other Changes	≤3d (95.0%)	✓ ---	p8
Technical Checks				
Technical Check (First)	Routine (Technical)	≤50m (95.0%)	✓ 6.89m	p9
Technical Check (First)	Routine (Non-Technical)	≤50m (95.0%)	✓ 4.1m	p9
Technical Check (First)	gTLD Creation/Transfer	≤50m (95.0%)	✓ 2.6m	p10
Technical Check (First)	ccTLD Creation/Transfer	≤50m (95.0%)	✓ ---	p10
Technical Check (First)	Other Changes	≤50m (95.0%)	✓ ---	p10
Technical Check (Retest)	Routine (Technical)	≤3m (95.0%)	✓ 2.1m	p11
Technical Check (Retest)	Routine (Non-Technical)	≤3m (95.0%)	✓ ---	p11
Technical Check (Retest)	gTLD Creation/Transfer	≤3m (95.0%)	✓ ---	p11
Technical Check (Retest)	ccTLD Creation/Transfer	≤3m (95.0%)	✓ ---	p12
Technical Check (Retest)	Other Changes	≤3m (95.0%)	✓ ---	p12
Technical Check (Supplemental)	Routine (Technical)	≤1m (95.0%)	✓ 0.61m	p13
Technical Check (Supplemental)	Routine (Non-Technical)	≤1m (95.0%)	✓ 0.28m	p13
Technical Check (Supplemental)	gTLD Creation/Transfer	≤5m (95.0%)	✓ 0.29m	p13
Technical Check (Supplemental)	ccTLD Creation/Transfer	≤5m (95.0%)	✓ ---	p13
Technical Check (Supplemental)	Other Changes	≤5m (95.0%)	✓ ---	p13
Contact Confirmations				
Email Dispatch	Routine (Technical)	≤60000ms (95.0%)	✓ 1ms	p14
Email Dispatch	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 1ms	p14
Email Dispatch	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ 1ms	p15
Email Dispatch	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0ms	p15
Email Dispatch	Other Changes	≤60000ms (95.0%)	✓ 1ms	p15
Recognition of Confirmation	Routine (Technical)	≤60000ms (95.0%)	✓ 0ms	p16
Recognition of Confirmation	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 0.4ms	p16
Recognition of Confirmation	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0ms	p17
Recognition of Confirmation	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ 0ms	p17
Recognition of Confirmation	Other Changes	≤60000ms (95.0%)	✓ 1ms	p17
Staff Processing				
Validation and Reviews	Routine (Technical)	≤5d (90.0%)	✓ 3.43d	p18
Validation and Reviews	Routine (Non-Technical)	≤5d (90.0%)	✓ 4.02d	p18
Validation and Reviews	gTLD Creation/Transfer	≤10d (90.0%)	✓ 1.03d	p19
Validation and Reviews	ccTLD Creation/Transfer	≤60d (100.0%)	✗ 93.32d	p19
Validation and Reviews	Other Changes	≤60d (100.0%)	✓ 6.8d	p19
Third Party Approval	ccTLD Creation/Transfer	≤60d	✓ 14.29d	p20
Implementation				
Root Zone Publication	Routine (Technical)	≤72h (99.0%)	✓ 33.08h	p21
Root Zone Publication	gTLD Creation/Transfer	≤72h (99.0%)	✓ 18.31h	p21
Root Zone Publication	ccTLD Creation/Transfer	≤72h (99.0%)	✓ 17.07h	p22
Root Zone Publication	Other Changes	≤72h (99.0%)	✓ ---	p22
Notification of Completion	Routine (Technical)	≤60s (95.0%)	✓ 0.36s	p23

Exceptions and Narrative for Reporting Period

Metric	Category	Expected	Actual
Manual Lodgment Time	Routine (Non-Technical)	3d	4.07d
Manual Lodgment Time	gTLD Creation/Transfer	3d	3.38d
Manual Lodgment Time	ccTLD Creation/Transfer	60d	93.32d

Primary cause: Clarification needed from requester

Analysis/Comments: Request started with an inquiry on how to make changes in the IANA root zone file, no change request was included in the initial communications with the requester, it was clarified that the procedure to lodge a request has previously recommended not including a change request in the initial communications. A. This request is on the list of items to address in the next reporting period. B. This request is on the list of items to address in the next reporting period. C. This request is on the list of items to address in the next reporting period. D. This request is on the list of items to address in the next reporting period. E. This request is on the list of items to address in the next reporting period. F. This request is on the list of items to address in the next reporting period. G. This request is on the list of items to address in the next reporting period. H. This request is on the list of items to address in the next reporting period. I. This request is on the list of items to address in the next reporting period. J. This request is on the list of items to address in the next reporting period. K. This request is on the list of items to address in the next reporting period. L. This request is on the list of items to address in the next reporting period. M. This request is on the list of items to address in the next reporting period. N. This request is on the list of items to address in the next reporting period. O. This request is on the list of items to address in the next reporting period. P. This request is on the list of items to address in the next reporting period. Q. This request is on the list of items to address in the next reporting period. R. This request is on the list of items to address in the next reporting period. S. This request is on the list of items to address in the next reporting period. T. This request is on the list of items to address in the next reporting period. U. This request is on the list of items to address in the next reporting period. V. This request is on the list of items to address in the next reporting period. W. This request is on the list of items to address in the next reporting period. X. This request is on the list of items to address in the next reporting period. Y. This request is on the list of items to address in the next reporting period. Z. This request is on the list of items to address in the next reporting period.

SLE Dashboard (Beta)

Recognition of Confirmation

Time for response to be affirmed by IANA.

Recognition of Confirmation 01-Oct-2016 00:00:00 UTC to 10-Mar-2017 19:00:13 UTC

Completion Date	Routine (Technical)	Routine (Non-Technical)	gTLD Creation/Transfer	ccTLD Creation/Transfer	Other Changes
Oct 2016	~0.35	~0.95	~0.00	~0.00	~0.00
Nov 2016	~0.95	~0.75	~0.95	~0.00	~0.00
Dec 2016	~0.95	~0.95	~0.50	~0.00	~0.00
Jan 2017	~0.70	~0.00	~0.00	~0.00	~0.00
Feb 2017	~0.00	~0.40	~0.00	~1.00	~0.00
Mar 2017 *	~0.00	~0.70	~0.00	~0.00	~0.00

* Partial Period

Last Update: 10-Mar-2017 19:00:13 UTC

Lastly...

- **We are starting our annual customer survey**
- Invitations were send out last week to people who have transacted with us in the past 12 months
- Historically we have had a low response rate from ccTLD managers.
- Please take a moment to respond to the invitations (they will come from a company called Ebiquity)
- Responses due by 17 November
- Questions about the process? Email iana@iana.org

Feedback welcome.

kim.davies@iana.org