



# IANA Root Zone Management Process

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David Conrad

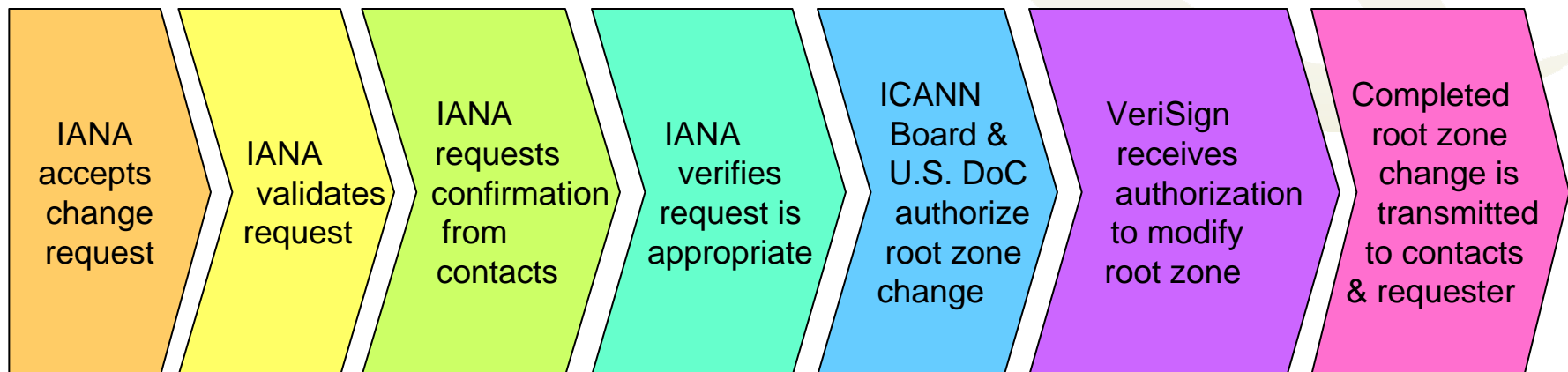
[david.conrad@icann.org](mailto:david.conrad@icann.org)

General Manager, IANA

# Root Zone Management Overview



- In a simplified form:
  - 7 basic steps:
    - Acceptance, Validation, Confirmation, Verification, Authorization, Implementation, Completion
  - Each step can be fast or slow, depending on the situation
    - Most problematic requests are due to slow confirmation phase



# Dramatis Personae

<b>Actor</b>	<b>Role</b>
Sponsoring Organization	The folk who define the Administrative Contact
Administrative Contact	The folk who define policies and Technical Contact
Proposed Admin Contact	In a redelegation, the folks who are nominated to be the AC
Technical Contact	The folks who operates the technical infrastructure
Proposed Tech Contact	In a redelegation, the folks who are nominated to be the TC
Local Internet Community	The community affected by and interested in the zone
Requester	The entity requesting the change
IANA	The folks who manage the root zone
ICANN Board of Directors	The folks who vote to on (re)delegations
U. S. Dept. of Commerce	The folks who authorize changes to the root zone
VeriSign, Inc.	The folks who implement root zone changes

# Acceptance

- Requests are submitted either via e-mail (via a template) or via a WWW form.
- **Anyone** can submit a root zone change request
  - Determining whether the request is appropriate is done elsewhere.
- Upon receipt of a request, a ticket is automatically generated to track the request.
- This phase, from IANA's perspective, is fully automated

# Validation

- Perform a syntactic check of the request form contents
  - Validate all the fields of the form where possible
    - Over 30 different syntactic checks, e.g.:
      - The country code is a valid ISO 3166 2 letter country code
      - The URL for the registration web page is a valid URL
      - Etc.
    - IANA also performs a preliminary technical check of the proposed DNS servers (if they are being changed)
  - Invalid requests are bounced back to the requester, asking them to clarify or correct the fields in error.
    - We often try to provide helpful hints if we can figure out what they were trying to do.
  - The goal is to fully automate this phase

# Confirmation

- This step authenticates the request by insuring the appropriate individuals confirm the change request.
- IANA sends out a confirmation request to the administrative and technical contacts
  - If the request is for a redelegation, we also send a confirmation request to the proposed administrative and technical contacts
  - If the request modifies a name server shared among multiple TLDs, the contacts of all TLDs are sent a confirmation request.
    - This is broken
- IANA then waits until we receive confirmations from **all** contacts.
  - Failure for any one contact to respond will block the request from moving forward
    - Most common reason for delays in root zone changes

# Verification

- IANA verifies:
  - Necessary documentation for the change is provided
    - Requester needs to demonstrate conformance to RFC 1591 and ICP-1
  - Technical requirements for the change are met
    - Name servers have to be serving the zone and be in synch
- In the case of (re-)delegations, IANA prepares documentation for the ICANN Board, describing the request and the conformance to requirements
  - Including, demonstration of local Internet community support, administrative and technical competence, etc.

# Authorization

- (Re)delegation requests require authorization by the ICANN Board of Directors
  - After reviewing the documentation provided by IANA, the ICANN Board of Directors can either vote to approve the change, reject the change, or request additional information.
- All root zone change requests require authorization by the U.S. Dept. of Commerce



# Implementation

- Once a change request is authorized, VeriSign is directed to modify the root zone.
  - This modification then gets propagated out to all the servers in the root server system
  - VeriSign also performs its own independent technical checks prior to root zone change.
- After VeriSign modifies the root zone, IANA notifies the requester the requested change has been implemented.
- IANA is working with VeriSign and DoC to increase automation of this phase

# Completion

- VeriSign notifies IANA of completion of the change request
  - IANA notifies requester of the completion of the change request.
  - IANA closes the request ticket
- Goal is to fully automate this phase

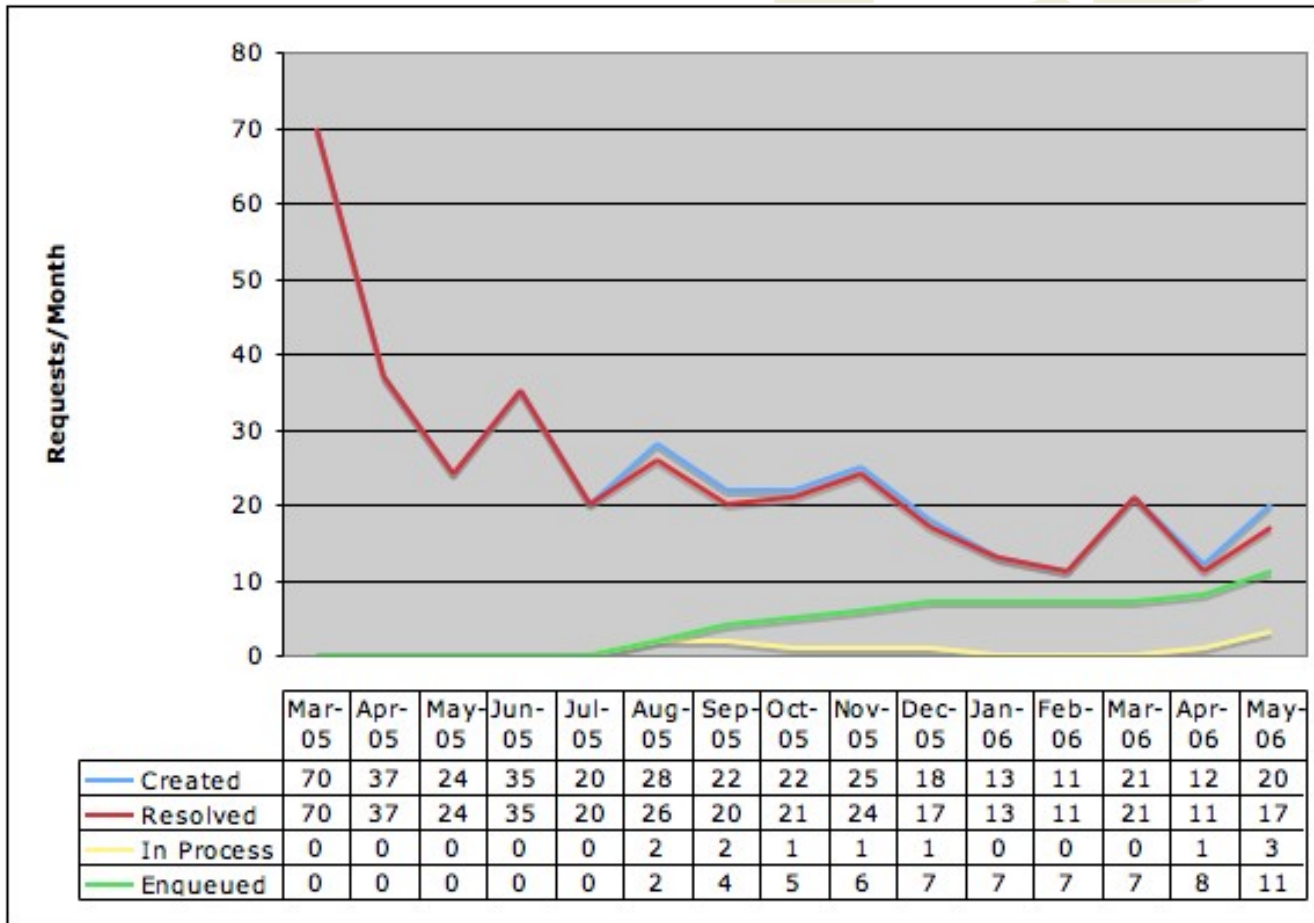
# Anticipated Time Frames

Step	Anticipated Completion Time
Acceptance	1 business day
Validation	3 business days
Confirmation	4 business days + contact response time
Verification	6 business days + investigation time
Authorization	(fully out of IANA's control) <sup>1</sup>
Implementation	(fully out of IANA's control) <sup>2</sup>
Completion	1 business day + VeriSign notification time

1. Historically, U.S. DoC turnaround time has been less than 1 business day, ICANN Board turnaround time depends on the Board Agenda.
2. Historically, VeriSign turnaround time has been less than 5 business days.

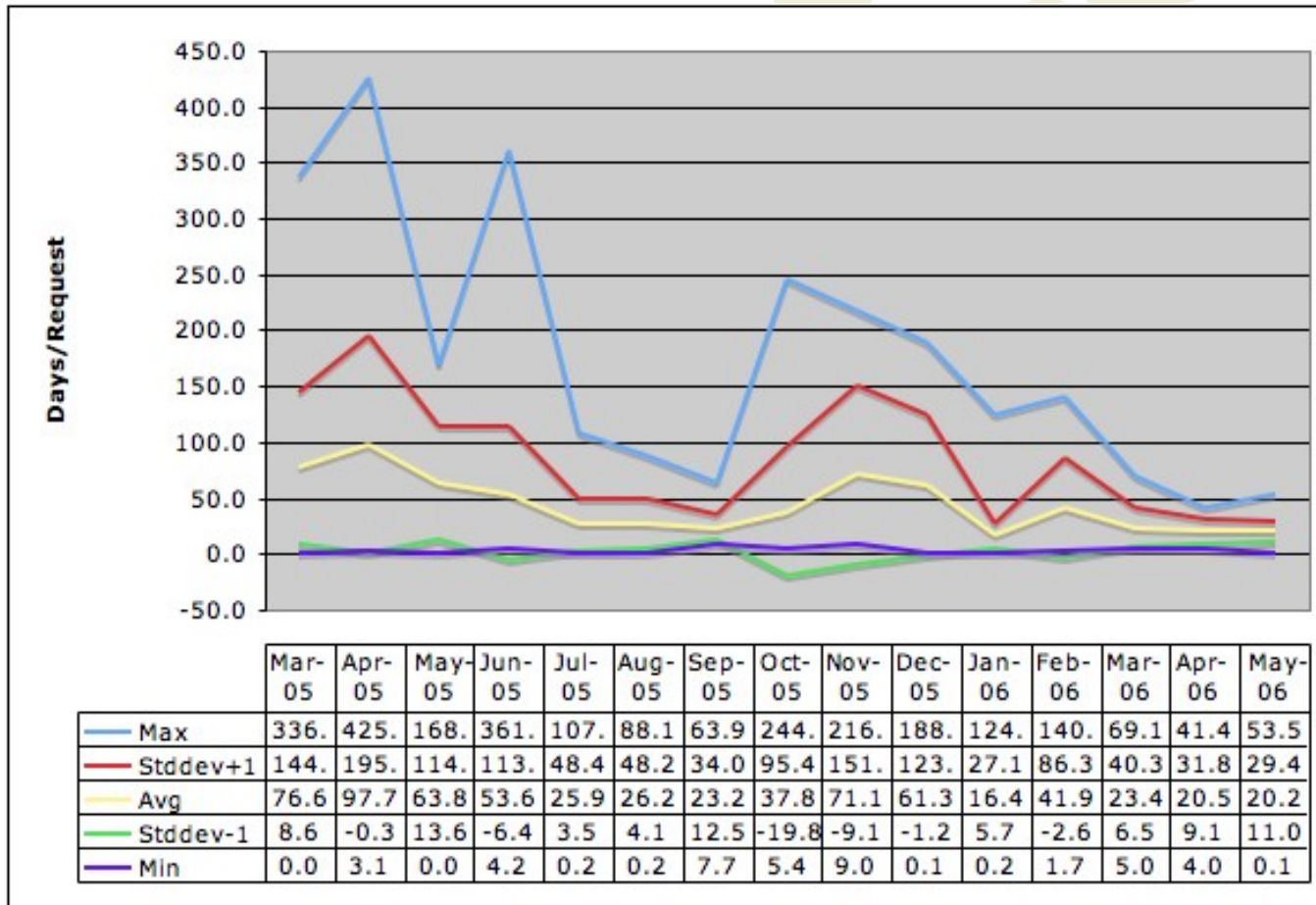
# Statistics

## Root Zone Change Requests / Month



# Statistics

## Root Zone Change Processing Time



# Summary

- The current root zone management process involves 7 steps:
  - Acceptance, validation, confirmation, verification, authorization, implementation, and completion.
- A wide variety of players are involved in root zone changes due to the sensitive nature of root zone changes.
- Anticipated completion time for a root zone change can vary wildly
  - Generally, a minimum of about a month or two can be expected.