IANA Update to the GNSO

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**PTI** | An ICANN Affiliate

Agenda

- Operations Update
  - Root Zone Management System
  - Root Zone KSK Updates
  - ZONEMD
  - Performance at a glance
- Developing our FY2025 Operating Plan and Budget
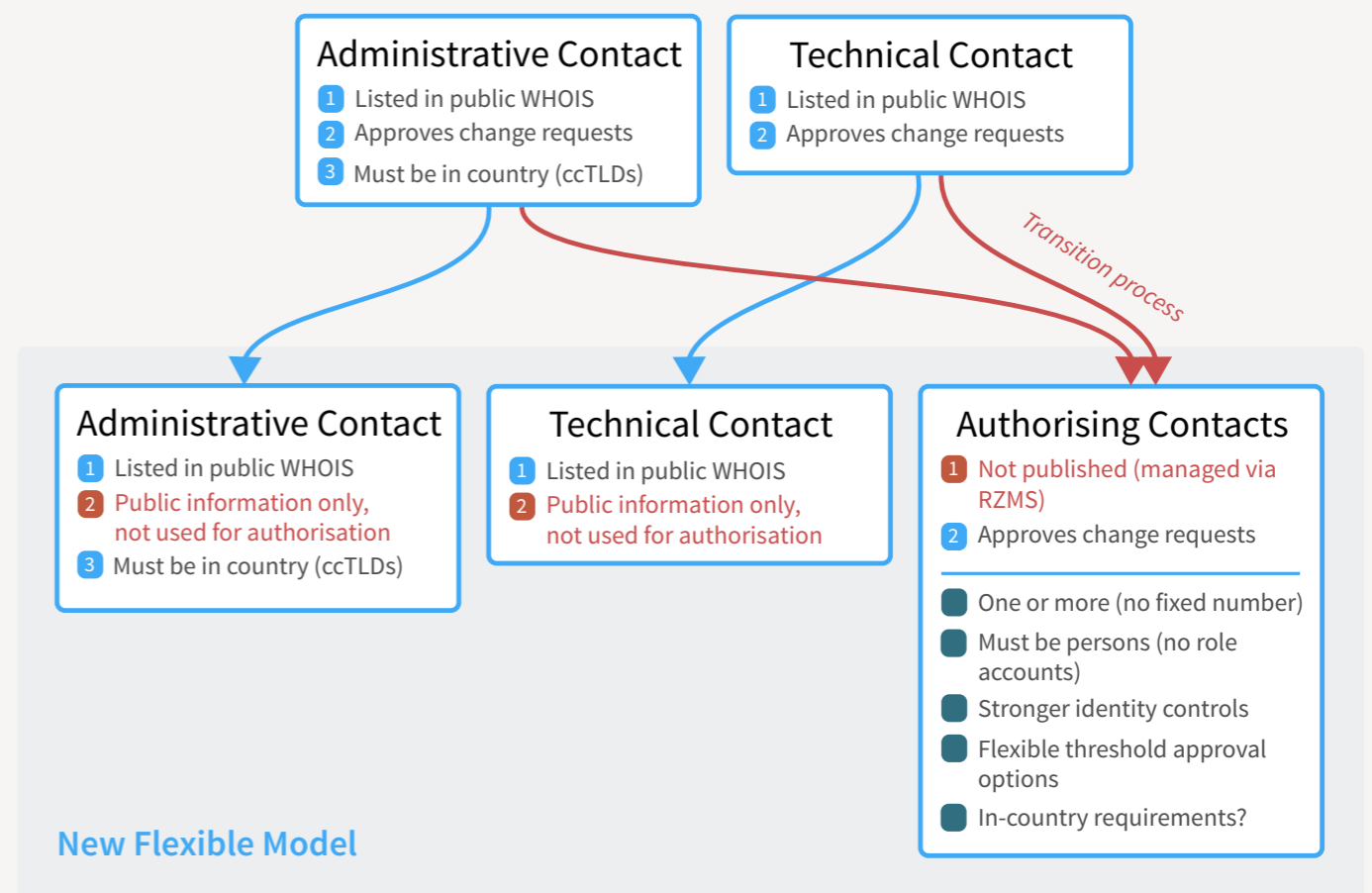- Our annual community survey

Root Zone Management System

- Our portal for TLD managers to submit change requests and interact
- Ground-up rewrite launched in December 2022
  - Previous code base had 20 year old origins
  - Largely reimplements existing functionality
- Separated technical check process into a separate module
  - More performant, easier to evolve on an independent track
  - Debug logs available to customers via self-service
- Enhanced audit logging
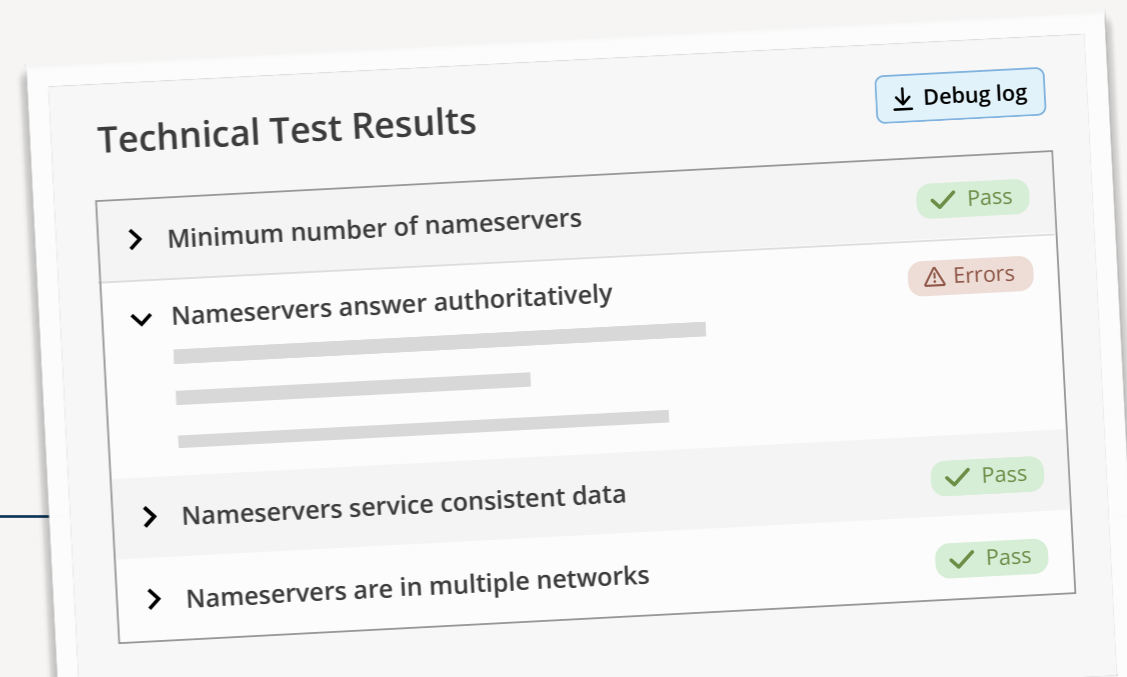
Root Zone Management System (2)

- **Key change is a new contact model**
  - Administrative and Technical Contacts separated
  - Now are only public facing points of contact in WHOIS etc.
  - New "authorizer" or "user" concept, fully configurable by TLD manager with privilege grants, granular to job responsibility

Administrative Contact
1. Listed in public WHOIS
2. Approves change requests
3. Must be in country (ccTLDs)

Technical Contact
1. Listed in public WHOIS
2. Approves change requests

Transition process

Administrative Contact
1. Listed in public WHOIS
2. Public information only, not used for authorisation
3. Must be in country (ccTLDs)

Technical Contact
1. Listed in public WHOIS
2. Public information only, not used for authorisation

Authorising Contacts
1. Not published (managed via RZMS)
2. Approves change requests

- One or more (no fixed number)
- Must be persons (no role accounts)
- Stronger identity controls
- Flexible threshold approval options
- In-country requirements?

New Flexible Model

Root Zone Management System future work

- **Multi-factor authentication**
  - TOTP (now), WebAuthn/Passkeys (later)
  - Adopted SSR2 recommendation
  - Difficulty is not technological but operational procedures
  - Implement enhanced "know your customer" procedures
- **Pass/fail/warn technical checks**
  - Provides flexibility to warn of conditions that TLD manager can self-dismiss, rather than blocking a change request
- **Health checks**
  - Proactively monitor TLDs, notify of issues to be remedied
  - Root Zone update study recommendation
- **Evolution of preliminary API**
  - Implement feedback to first iteration; add sandbox

Root Zone KSK

- **Algorithm Rollover Study**
  - Community convened activity to develop requirements to update the cryptographic key in the Root Zone
  - Draft findings now seeking public comment
  - https://www.icann.org/en/public-comment/proceeding/draft-report-of-the-root-zone-dnssec-algorithm-rollover-study-19-10-2023
- **Ongoing activity to replace Trusted Community Representatives**
  - Always seeking new qualified candidates
  - https://iana.org/tcr
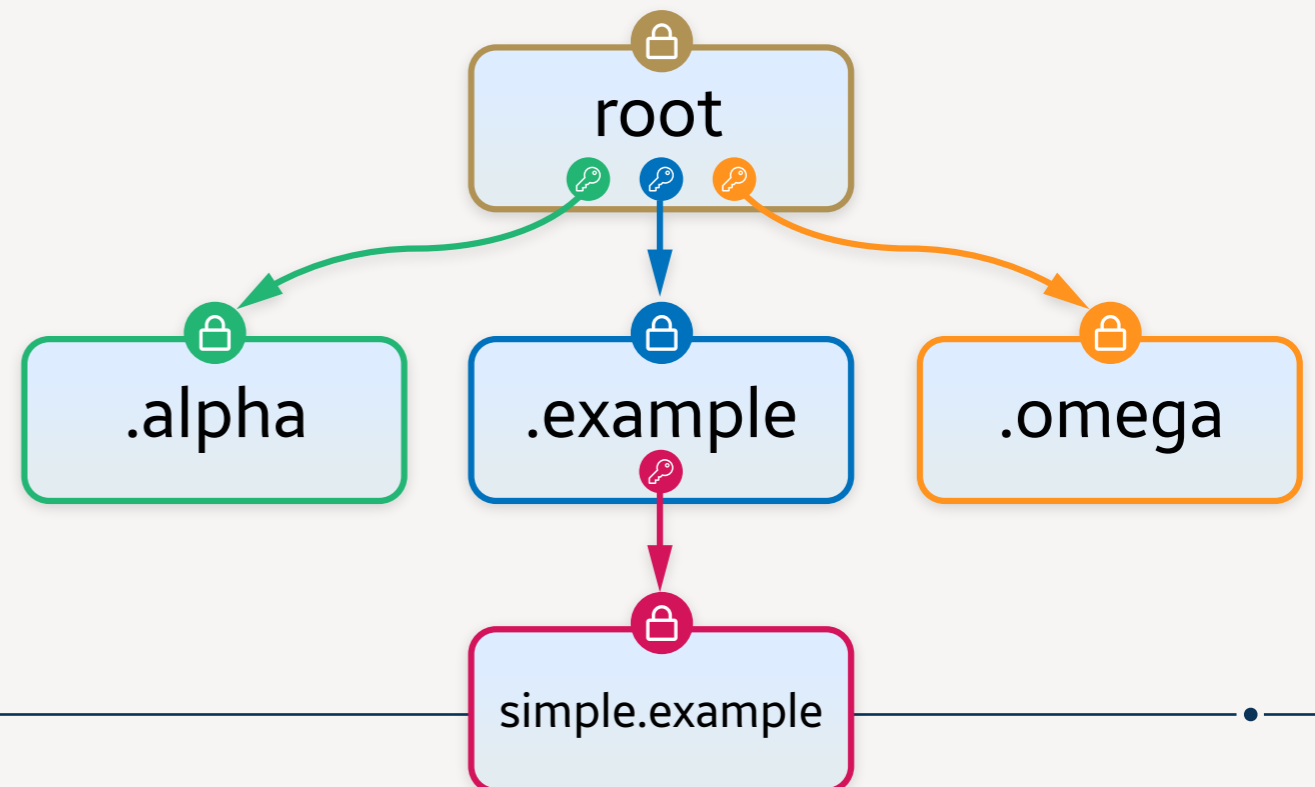
Root Zone KSK (2)

- **2nd Key Rollover and HSM Replacement**
  - We've embarked on the 2nd ever replacement of the key
    - Highly orchestrated event, propagation to all validators through vendor updates etc.
  - Stalled due to the need to replace our hardware security modules, will restart soon and regenerate a new key
  - Community work on algorithm rollover requirements for public comment soon (e.g. elliptic curve algorithm)

2023   2024   2025   2026

April Key #3 Generated

Paused

July Key #3 Replicated

Q2 2026 Key #4 Generation

Q3 2026 Key #4 Replication

2 year propagation period

October 2025 Rollover to Key #3
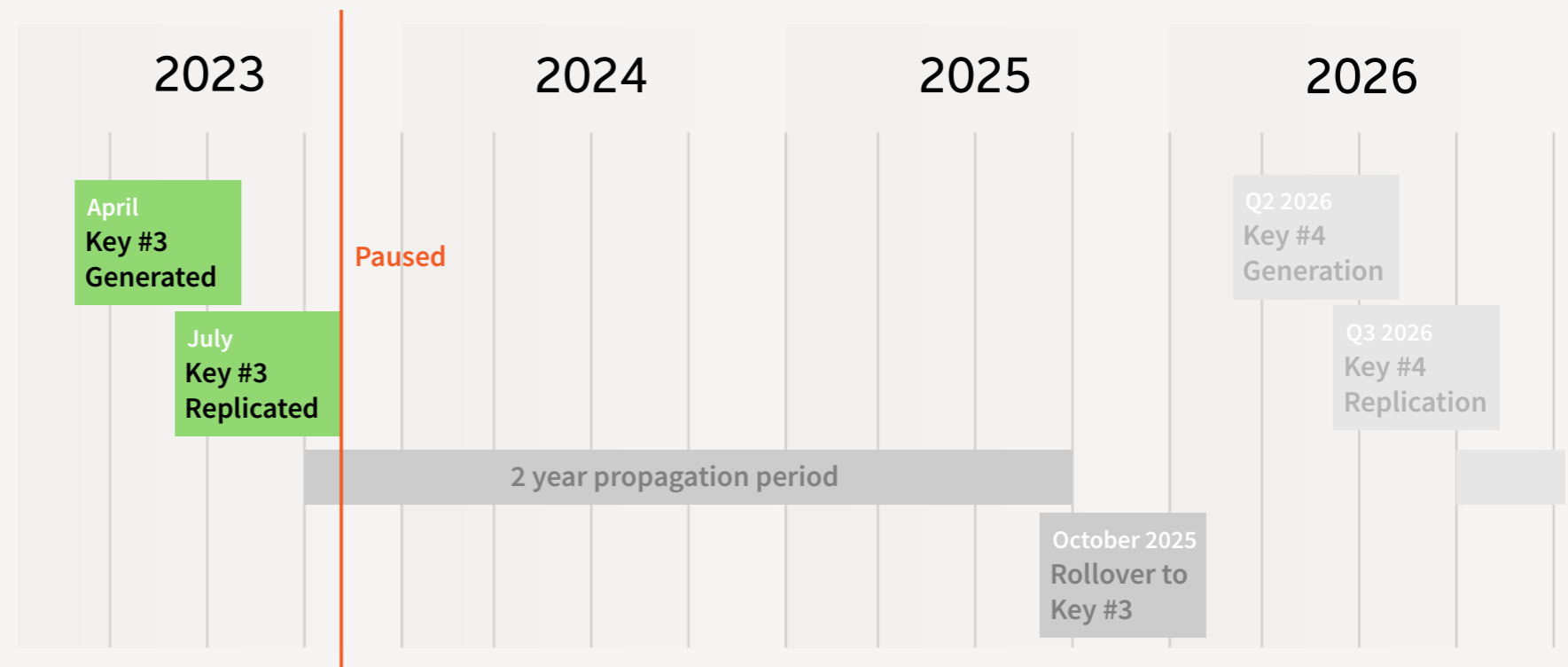
ZONEMD

- New record in the root zone, provides a checksum that allows software to confirm they've received a complete uncorrupted version of a root zone

  - Helps implementers of local root zones, e.g. hyperlocal technique

- Provisionally added to root zone in September in an unverifiable format

  - Shake out any software issues before full production release

  - Some implementers did run into problems

    - https://blog.cloudflare.com/1-1-1-1-lookup-failures-on-october-4th-2023/

    - IANA too! Some of our internal tools needed some updates

- Planned to launch full production use on December 6

Performance

At a glance

Naming
🕐 **99.5%**
SLAs met between July and September 2023

Protocol Parameters
🕐 **100%**
SLAs met between July and September 2023

Numbers
🕐 **100%**
SLAs met between July and September 2023

Satisfaction
🏆 **95.7%**
customer satisfaction during September 2023

System Status
No known issues.

Security
No recent security events.

Metric	Category	Expected	Actual
Technical Check (Retest)	Routine (Technical)	10m	13.75m 🔖
Primary cause:	Unreachable nameservers		
Analysis/Comments:	One request exceeded the technical check threshold of 10 minutes. This exception relates to time spent waiting for responses from unreachable nameservers (i.e. time waiting to timeout, multiplied by retries).		

Performance (2)

- Performance reporting against SLAs
- Post-transaction surveys
- Annual surveys
- Community reviews

https://iana.org/performance

Operating Plan and Budget for FY2025

FY25 and Beyond

- ◉ PTI Bylaws changes approved in August 2023:
  - ○ Extended current PTI Strategic Plan to end FY25.
  - ○ Aligned the PTI Strategic Plan period to ICANN's: FY26-FY30.
  - ○ Aligned PTI's Operating Plan & Budget process to ICANN's.

- ◉ FY25 PTI OP&B key priorities:
  - ○ Continue to evolve RZMS, focusing on:
    - • Identify new types of TLD technical issues, and allow low severity issues to be self-dismissed by the customer without the need for IANA staff intervention.
    - • Implement passwordless authentication using new web authentication standards (e.g. passkeys)
  - ○ Providing Root Zone DNSSEC management enhancements.

    - • Review the recommendations from the algorithm rollover study and coordinate implementation with the multistakeholder communities.
    - • Recommence the procedure for the next Key Rollover using next generation hardware security modules.
  - ○ Ongoing significant operational improvements to the iana.org website.

CALL TO ACTION: Participate in the FY25 OP&B Public Comment from 12 December 2023 - 11 February 2024

We need your feedback!

- Each year we conduct a broad survey with community stakeholders.

- Help the IANA team identify areas of focus for the upcoming year by filling out a brief survey.

- A couple minutes of your time will greatly help us!

Thank you!