



84

ANNUAL
GENERAL
MEETING



Inside IROS

Identifier Research, Operations, and Security Function

October 2025

IROS (Identifier Research, Operations and Security)

The IROS function
an umbrella that covers two teams:

Office of the Chief Technology Officer
(OCTO)

Collecting data, researching and writing papers, providing training and capacity building, and trying to help identify and measure DNS security threats and abuse.

IANA Functions

Delivering the names, numbers, and protocol parameters functions that the community depends upon for the Internet to work.

IROS (Identifier Research, Operations and Security)

- **Operations:** Liaise between OCTO and other ICANN functional teams and facilitate OCTO-specific meetings and activities - ICANN DNS Symposium (IDS), budget management, as well as provide project management and other support to OCTO and IANA (as requested).
- **Technical Engagement (TE):** Develop framework for organizations to cooperate, coordinate, and collaborate with ICANN on technical matters. Ensure a coherent technical engagement across ICANN by framing and communicating the organization's technical position.
- **Research:** Provide trusted and verifiable information to the Internet community regarding the system of unique identifiers. Perform studies or analyze data to better understand the health and well-being of the DNS ecosystem.
- **Security Stability and Resiliency (SSR) Research:** Leads cybersecurity discussions and contributes subject matter expertise, research and tooling that, in one form or another, helps to maintain secure and resilient identifier systems.

IROS (Identifier Research, Operations and Security)

Technical Engagement

Adiel Akplogan

VP, Technical Engagement

Technical Engagement

- Develop and sustain relationships with other technical organizations who share the vision and responsibility for secure, stable, and resilient unique identifier system coordination.
- *Involve building a proper framework for organizations to cooperate, coordinate, and collaborate with ICANN on technical matters.*
- Coordinate ICANN the Knowledge-Sharing and Instantiating Norms for DNS and Naming Security (KINDNS - kindns.org) initiative.

Technical Engagement

- **Technical capacity building and outreach:**
 - Regional/local training and capacity development programs
 - Technical content for online training platform (ICANN-Learn)
 - Training partnerships
- **Engagement with the broader technical community:**
 - Promote ICANN's technical initiatives
 - Technical assessment of policies, regulations, and technology trends
 - Support regional communities on technical topics (IDNs, DNS, DNSSEC, security best practices for Internet Identifiers System)
 - Support SSAC, RSSAC, UASG, and other advising constituencies engagement efforts
 - Engage with Law Enforcement and Public Safety Community on DNS technical related matters.
 - Support CDA technical Tracks (DNSSEC Roadshow, IXP, IMRS & ccTLD Capacity Building)

Regional Coverage



Adiel Akplogan,
Vice President for
Technical Engagement



David Huberman

Ulrich Wisser

Champika Wijayatunga

Nicolás Antoniello

Yazid Akanho

Technical Engagement



TECHNICAL
TRAINING
EUROPE

Advanced DNSSEC

*Prerequisites: Basic knowledge of
DNS and DNSSEC*

📅 18 September 2024

🕒 12:00 - 13:30 UTC

[REGISTER NOW](#)

ULRICH WISSER
Regional Technical
Engagement Manager
for Europe, ICANN



WHAT WE DO

**STRENGTHENING
ICANN'S ENGAGEMENT
WITH THE GLOBAL
TECHNICAL COMMUNITY**



IROS (Identifier Research, Operations and Security)

Research

Research Goals

- Provide trusted and verifiable information to the Internet community regarding the system of unique identifiers
- Engage actively with the DNS technology communities to identify issues that fall within ICANN's remit and will benefit from the focused attention our researchers can bring to bear on the issue
- Facilitate or participate with these same communities in preparedness activities to protect against or mitigate threats to DNS ecosystem
- Perform studies or analyze data to better understand the health and well-being of the DNS ecosystem
- Root server traffic research
- Represent ICANN org on RSSAC

Research Activities

- Identifier Technology Health Indicators (ITHI)
 - Develop metrics to measure the health of the Internet's unique identifier system
- DNS authoritative servers and resolvers
 - Concentration and distribution
- Resource Public Key Infrastructure (RPKI)
 - Coverage of DNS servers and resolvers by Route Origin Authorizations (ROAs)
- DNSSEC error reporting
 - Develop protocol and facilitate and encourage implementation
- ICANN L-root root server behavior
 - Tracking round trip times from various locations

IROS (Identifier Research, Operations and Security)

Security, Stability, & Resiliency Research

SSR Research Goals

Support ICANN's commitment to ensure the security, stability, and resiliency of the topmost levels of the Internet's system of unique identifiers by:

- Understanding the state-of-the-art research
- Leading and carrying out research in the areas that is relevant to the SSR of DNS
- Creating tools, visuals and data that helps the community to understand and measure events related to SSR of DNS
- Facilitating cyber security discussions
- Contributing subject matter expertise or data that helps maintain secure and resilient identifier systems
- Educating the community on the topics related to SSR of DNS
- Providing funding to projects/conferences that require support to conduct innovative research or have discussions around SSR of DNS

Key SSR Research Activities

- ICANN Domain Metrics **Keep an eye for the updates in the Techday - Try the platform**
- Inferential Analysis of Maliciously Registered Domains (INFERMAL) - final report out on ICANN website
- Quantifying the prevalence and implications of “**Active**” Domains
 - [Paper](#) accepted and presented at IEEE Security & Privacy EUROPE 2023
- Developing a **classifier** for **unsolicited** email, based on data from APWG
 - Paper accepted and presented at TRUSTCOM 2023
- Developing Metrics that allows for Reputation Block Lists **Evaluations**
 - [Paper](#) accepted and presented at APWG e-crime 2023 conference
- Blockchain based domains based on **root data observations**
 - Initial research results presented at IDS
- **DNS Abuse prediction** research: Flag potentially malicious domain names using ML techs
- Estimating malicious domains’ **uptime**

IROS (Identifier Research, Operations and Security)

The work of the IROS team

Where can you find it?

OCTO Document Series

- OCTO publishes technical documents written by OCTO authors in the OCTO document series
 - Series started in 2019
 - Published 41 documents and counting
- Recent examples:
 - A Verifiable and Reproducible Random Candidate Selection Process (OCTO-041)
 - Introduction to Blockchain Technologies (OCTO-040)
 - Introduction to Blockchain Name System Technologies (OCTO-039)
 - Methodology to Classify Unsolicited Email Threats (OCTO-038)
 - RBL Evaluation Methodology (OCTO-037)
- Links to all documents at <https://www.icann.org/octo/publications>

External work of the OCTO team

ICANN Blog



ICANN Trains More than 200 Students During Grenada ICT Week

13 March 2023

By David Huberman and Naela Sarraz



ICANN Mobile Network Operator Day 2023: Strengthening the DNS Ecosystem Security

30 November 2023

By Yazid Akanho



ICANN Publishes Paper on Defense Mechanisms Against Harmful Internet Content

18 December 2023

By Carlos Hernandez Ganan, Siôn Lloyd, and Samaneh Tajalizadehkhoob, Ph.D.

Reputation Block Lists (RBLs) serve as a common defense against harmful and unwanted Internet content. These lists contain the Internet Protocol addresses, domain names, or full uniform resource locators of known spam sources, phishing pages, malicious sites, or other unwanted content. We use these data sources for producing metrics in systems like [ICANN's Domain Abuse Activity Reporting \(DAAB\) system](#) for research, and as training sets for machine learning models, among other uses. Organizations may use RBLs to block incoming or outgoing access to domain names, filter spam, warn about phishing or other activities, all of which protect users from online threats.

Speaking engagements



84

ANNUAL GENERAL MEETING

INTERNET SERVICE PROVIDERS AND CONNECTIVITY PROVIDERS (ISPCP) CAPACITY BUILDING WITH OCTO



ULRICH WISSER
REGIONAL MANAGER
EUROPE



YAZID AKANHO
REGIONAL MANAGER
MIDDLE EAST AND AFRICA

9 NOVEMBER 2024
ADDIS ABABA

DIVE INTO ICANN'S OCTO TEAM AND ITS INITIATIVES



Questions?



icann.org



[@icann](https://twitter.com/icann)



facebook.com/icannorg



youtube.com/icannnews



flickr.com/icann



linkedin.com/company/icann



instagram.com/icannorg

IANA Functions

Marilia Hirano

Director, IANA Strategic Programs

What is IANA?

- 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

Why do the IANA functions exist?

- Coordinating the Internet unique identifier systems is needed to ensure the Internet interoperates globally
- If Internet-connected devices do not use the same system of identifiers and numbers to talk to one another, the system will not interoperate (i.e. speak a common language)
- The authoritative registries are used by vendors, service providers, businesses, application developers and others to innovate and expand the use of the Internet

Core Deliverables

Protocol Parameters: Create new registries, or add new values to existing registries.

Names: Assignment and transfer of TLDs and routine maintenance of name servers and other technical elements; Manage the Root Zone KSK

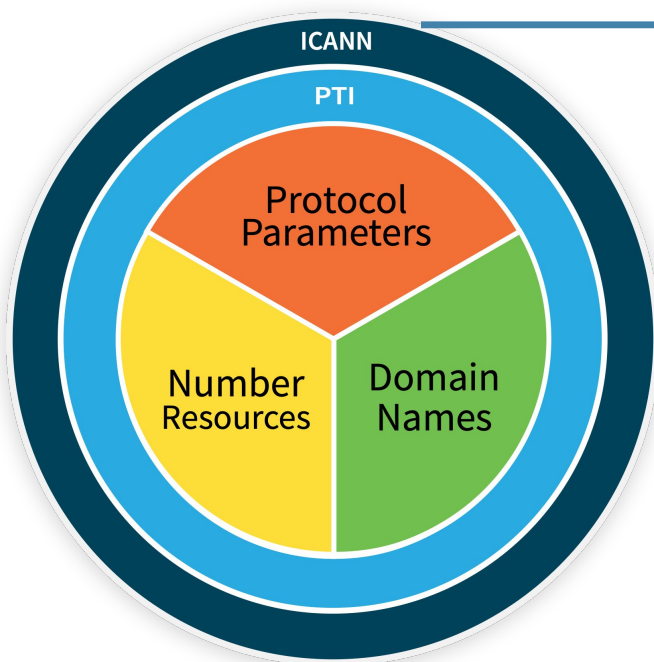
Numbers: Allocate large IP address blocks to RIRs for distribution to their communities.

- Managing registry data - approx 3000 registries.
- Serve as SME for upcoming standards efforts and global policy development.
- Adhere to contractual mandates - Service Level Agreements

IANA Functions

Who's involved?

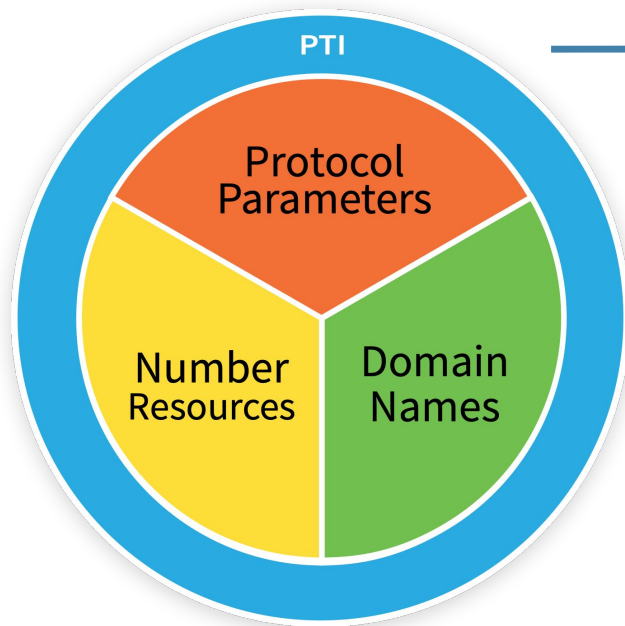
Oversight



ICANN

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

Oversight



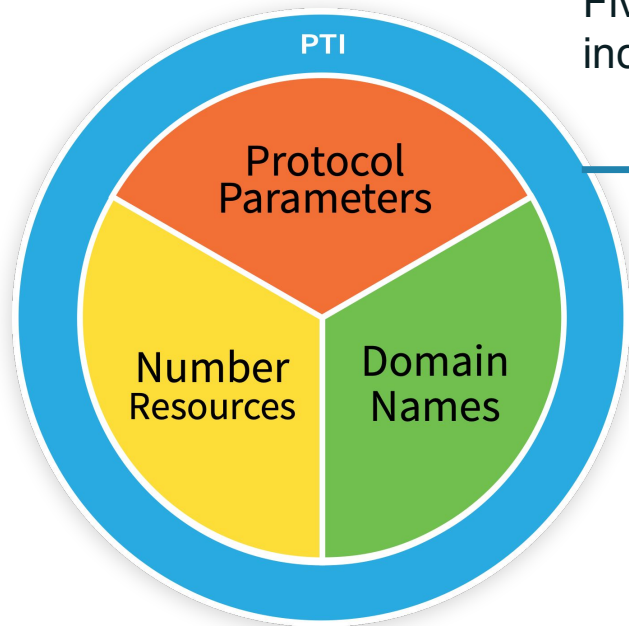
Public Technical Identifiers

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

Oversight

PTI Board

Five-member board of directors
including 2 Nomcom appointees



Anupam Agrawal
NOMCOM APPTTEE



Xavier Calvez
ICANN CFO



Kim Davies
PTI PRESIDENT

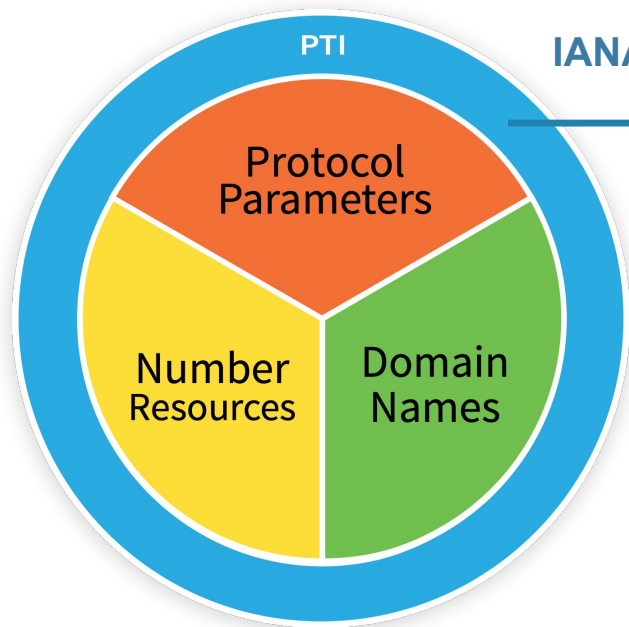


John Crain
ICANN CTO



Tobias Sattler
CHAIR
NOMCOM APPTTEE

The team



IANA Staff



Shaunte Anderson



Amanda Baber



Tyler Carroll



Kim Davies



David Dong



Aaron Foley



Selina Harrington



Lawrence He



Marilia Hirano



Tania Hopkins



James Mitchell



Ali Mohammadi



Candice Montoya



Andres Pavez



Racquel Ross



Seman Said



Sabrina Tanamal

● Operations

● Strategic Programs

● Technical Services

IANA Operations

- Process all requests for Protocol Parameter, Internet Numbers and Domain Name functions
- IANA Subject Matter Experts for process and system enhancements, and customer engagement
- Adherence and reporting to various SLAs
- Emergency root zone change requests

IANA Technical Services

- Software Development
- Product Management
- Cryptographic Business Operations - Root Zone Key Signing Key
- System monitoring and maintenance



IANA Strategic Programs

- Third-Party Information Security Audits
- Risk, Audit & Compliance
- Customer Satisfaction Surveys
- Continuous Improvement
- Project Management
- Community Engagement
- Strategic and Operating Plan & Budget



How was your recent IANA service experience regarding .fk?

IS IANA Services <noreply-45900088aa66416ba9fa085fb6874313@iana.org>
Seman Said;
Monday, October 15, 2018 at 3:39 PM
[Show Details](#)

Dear Colleague,

We'd like to hear about how your recent request was handled by the IANA Services team. Please take a single question survey to provide us your valuable feedback.

On 5 October 2018, you submitted a change request for the .fk top-level domain. How do you rate your experience?

Don't want to receive these surveys?
While your feedback as our customer is valuable, we don't want to bother you if you find these intrusive. We don't send more than one of these requests every 60 days. If you wish to permanently stop receiving customer survey click [here](#)

Key takeaway

The IANA Department does

- ✓ Create registries based on policies from the community
- ✓ Maintain existing registries
- ✓ Allocate number resources
- ✓ Publish all registries for general public use

The IANA Department doesn't

- ✗ Create nor interpret policy
- ✗ Determine what can be a domain name
- ✗ Choose TLD managers

Want to know more?

Join us on **Monday at 15:00** so you can:

- Learn more about the history of IANA and why it's so important
- Explore practical examples of our work
- Find out what we'll be working on for the next five years
- Discover the less known, but equally important functions IANA is responsible for.
 - *Spoiler alert:* it changes twice a year in many countries!
 - *Spoiler alert #2:* You've probably seen it in movies or TV series!

Mark your calendars:

<https://icann84.sched.com/event/29QIt/iana-from-origins-to-horizons>

Share your thoughts!

IANA at ICANN84



Kim Davies



Selina Harrington



Marilia Hirano



Tania Hopkins

Take our ONE minute survey!



<https://survey.yonder-research.com/ASP/IANAEventsFeedbackSurvey/2025.asp>

Survey is anonymous and administered by Echo Research, LLC