



# SSAC Activities Update

Rod Rasmussen, SSAC Chair | ICANN66 | November 2019

# Agenda

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SSAC  
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Environmental Scan of  
Threats and Risks to  
the DNS

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Comments on Evolving  
the Governance of the  
Root Server System

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SSAC2019-07: New  
gTLDs (root scaling  
and DNS abuse)

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# Security and Stability Advisory Committee (SSAC)

## Who We Are



- **38 Members**



- Appointed by the ICANN Board

## What We Do



Role: Advise the ICANN community and Board on matters relating to the security and integrity of the Internet's naming and address allocation systems.

## What is Our Expertise

- Addressing and Routing
- Domain Name System (DNS)
- DNS Security Extensions (DNSSEC)
- Domain Registry/Registrar Operations
- DNS Abuse & Cybercrime
- Internationalization (Domain Names and Data)
- Internet Service/Access Provider
- ICANN Policy and Operations

## How We Advise



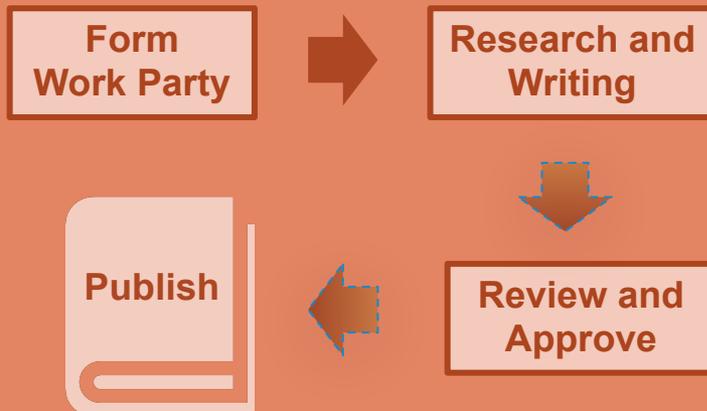
**106 Publications  
since 2002**

# Security and Stability Advisory Committee (SSAC)

## ICANN's Mission & Commitments

- To ensure the stable and secure operation of the Internet's unique identifier systems.
- Preserving and enhancing the operational stability, reliability, security and global interoperability, resilience, and openness of the DNS and the Internet.

## SSAC Publication Process



## Consideration of SSAC Advice

(to the ICANN Board)

SSAC Submits Advice to ICANN Board

Board Acknowledges & Studies the Advice

Board Takes Formal Action on the Advice

1. Policy Development Process

3. Dissemination of Advice to Affected Parties

2. Staff Implementation with Public Consultation

4. Chose different solutions (explain why advice is not followed)

# Security and Stability Advisory Committee (SSAC)

## Recent Publications

[SAC106]: Comments on Evolving the Governance of the Root Server System (8 August 2019)

[SAC105]: The DNS and the Internet of Things: Opportunities, Risks, and Challenges (3 June 2019)

**ICANN | SSAC**  
Security and Stability Advisory Committee

## Outreach



ssac.icann.org and SSAC Intro:  
[www.icann.org/news/multimedia/621](http://www.icann.org/news/multimedia/621)



[www.facebook.com/pages/SSAC/432173130235645](https://www.facebook.com/pages/SSAC/432173130235645)



SAC067 SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition and SAC068 SSAC Report on the IANA Functions Contract: [www.icann.org/news/multimedia/729](http://www.icann.org/news/multimedia/729)

# Current Work

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- ◉ Name Collision Analysis Project
- ◉ SSAC Organizational Review
- ◉ Improving SSAC Working Processes
- ◉ DNS over HTTP / DNS over TLS
- ◉ Studying Abuse in the DNS
- ◉ Scan of Threats to Internet Naming and Addressing (Ongoing)
- ◉ DNSSEC and Security Workshops (Ongoing)
- ◉ EPDP Phase 2 (Ongoing)
- ◉ Membership Committee (Ongoing)

# Topics of Interest/Possible New Work

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- DNSSEC DS key management and other registrar/registry control issues
- Domain name hijacking attacks
- .internal
- Resolverless DNS
- Operational concentration of the DNS infrastructure

# Scan of Threats to Internet Naming and Addressing

Rod Rasmussen

# Threats to Internet Naming and Addressing

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- SSAC initiated an environmental scan of threats and risks to the DNS in the following categories:
  - DNS Abuse
  - DNS Security
  - Addressing and Routing
  - Registration Services
- At its September workshop the SSAC held an exercise to assess each threat/risk and rank items by event probability and potential event impact to the DNS
- SSAC is continuing its threat identification, assessment, and ranking exercise to inform future work parties and membership recruitment efforts
- SSAC to align with ICANN strategic plan for 2021-25

# SAC106: Comments on Evolving the Governance of the Root Server System

**Russ Mundy**

## SAC106: Comments on Evolving the Governance of the RSS

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- SSAC input to the Evolving the Governance of the Root Server System ICANN Public Comment Proceeding
- SSAC is confident the proposed framework is capable of identifying technology, policy, operations, and security issues and responding to issues as they arise
- SSAC makes four recommendations to assist the Governance Working Group (GWG) during its deliberations to adopt this proposed structure.

# SAC106: Comments on Evolving the Governance of the RSS

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- ◉ **Recommendation 1:** The SSAC recommends that the SSAC be included as a voting member in the Governance Working Group (GWG).
- ◉ **Recommendation 2:** The SSAC recommends that the SSAC not be given any operational roles in any standing committees, operational committees, or other bodies that emerge from the deliberations of the GWG, but is open to invitations to participate in an advisory capacity, consistent with SSAC's charter, experience and capabilities.
- ◉ **Recommendation 3:** The SSAC recommends that decisions of the GWG be made on the basis of consensus, and that votes only be taken when formality is required or consensus is not achievable.
- ◉ **Recommendation 4:** The SSAC recommends that bodies involved in the ongoing oversight of the RSS be reviewed regularly to ensure that the RSS is both meeting its commitments and that it remains responsive to evolutionary needs and changing environmental factors as appropriate.

# SSAC Input on ICANN org's preparation toward implementation of a new round of gTLDs

**Rod Rasmussen**

# Implementation of Subsequent Procedures of New gTLD Program

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- SSAC2019-07: ICANN org's preparation toward implementation of a new round of gTLDs
- SSAC reiterated its recommendations contained in SAC100: SSAC Response to the New gTLD Subsequent Procedures Policy Development Process Working Group Request Regarding Root Scaling
- SSAC remains concerned that the last round appears to have introduced the phenomenon of TLDs with exceptionally high rates of abusive registrations
- SSAC is planning to study this issue and provide advice accordingly

# Relevant Publications

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- SAC100: SSAC Response to the New gTLD Subsequent Procedures Policy Development Process Working Group Request Regarding Root Scaling
- SAC103: SSAC Response to the new gTLD Subsequent Procedures Policy Development Process Working Group Initial Report
- RSSAC031: Response to the GNSO Policy Development Process (PDP) Working Group on the new Generic Top Level Domains (gTLDs) Subsequent Procedures
- IAB correspondence with ICANN on their “Scaling the Root” study., 14 October 2009

# Name Collision Analysis Project

**Jim Galvin**

# Name Collision Analysis Project Update

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- ICANN Board tasked SSAC to conduct studies to present data, analysis and points of view, and provide advice to the Board on name collisions
  - Specific advice regarding .home/.corp/.mail
  - General advice regarding name collisions going forward
  
- Studies to be conducted in a thorough and inclusive manner that includes other technical experts

# NCAP - Proposed Project Management Structure

<b>Roles</b>	<b>Entities</b>
Project Customer	ICANN Board
Project Steering Group	BTC Leadership, SSAC Leadership, NCAP Co-Chairs, OCTO
Project Director / Owner	OCTO
Project Technical Architect	SSAC

# Name Collision Analysis Project Update

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- **Study One: Gap Analysis**
  - Properly define name collision
  - Review and analyze past studies and work on name collision and perform a gap analysis
- **Study Two: Root Cause and Impact Analysis**
  - Suggested criteria for determining whether an undelegated string should be considered a string that manifests name collisions, i.e., is a “collision string”
  - Suggested criteria for determining whether a Collision String should not be delegated
  - Suggested criteria for determining how to remove an undelegated string from the list of “Collision Strings” (aka mitigations)
- **Study Three: Analysis of Mitigation Options**
  - Identification and assessment of mitigation options
  - Production of recommendations regarding delegation

# Name Collision Analysis Project Update

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- July 2019: Definition of Name Collision and Scope of Inquiry for the Name Collision Analysis Project posted for public comment through 20 August 2019
- July 2019: ICANN OCTO puts out RFP for contractor to perform bulk of Study One data gathering and analysis for input to the work party.
- October 2019: Vendor selected
- November 2019: Vendor begins work on Study One
  - First meeting on 1 November 2019
  - Call to Action:
    - Please join NCAP Discussion Group
    - Link to NCAP Membership:  
<https://go.icann.org/2oEgnZp>

# Updates on SSAC Current Work Parties

**Barry Leiba, Greg Aaron, Ben Butler, Jeff Bedser**

# DNS over HTTPS / DNS over TLS

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- The work party is creating a report to explain the technical changes introduced with DNS over HTTPS and DNS over TLS
- The target audience is the ICANN community as well as the larger Internet community
- The report will investigate
  - Impacts on different Internet actors
    - End users, network operators, governments, etc
  - Risk/benefit analysis of different deployment models
  - Issues of who decides resolver choice and what other implications arise from that decision

# DNS over HTTP, DNS over TLS (continued)

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- Preliminary Findings
  - Most concerns arise not from the DoH and DoT protocols themselves, but from choices made in the implementation, deployment, or operation of DoH/DoT
  - This is a complex situation with few black-and-white, right-or-wrong positions
- Next Steps
  - Work Party finish report
  - SSAC internal review
  - Publish report
  - Gather community feedback

# EPDP on the Temp. Spec. for gTLD Registration Data

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- Work party to support SSAC members that are sitting on the EPDP WG
- Current SSAC Members on EPDP WG:
  - Ben Butler
  - Greg Aaron
  - Tara Whalen (Alternate)
  - Rod Rasmussen (Alternate)
- The SSAC participates to make sure the positions articulated by the past SSAC advisories are made available and represented in the ePDP work

# DNS Abuse

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- Work party recently formed
- Several potential areas to study/comment upon
- SSAC has not provided a formal definition of “abuse” but will look to provide useful guidance/framework for policy making
- Study areas may include
  - The evolution of the threat landscape & current threats
  - Abuse patterns across TLDs and registrars (root causes?)
  - Examination of successes and failures in dealing with abuse under current paradigms/policy
  - Study of effective anti-abuse practices by contracted parties

# Questions to the Community

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- What topics would you like SSAC to consider as work items?
- What would you like SSAC to comment on?

# Thank you