RSSAC Overview and Reorganisation Process

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RSSAC Overview and Reorganisation Process

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RSSAC in the ICANN Community and Internet Ecosystem
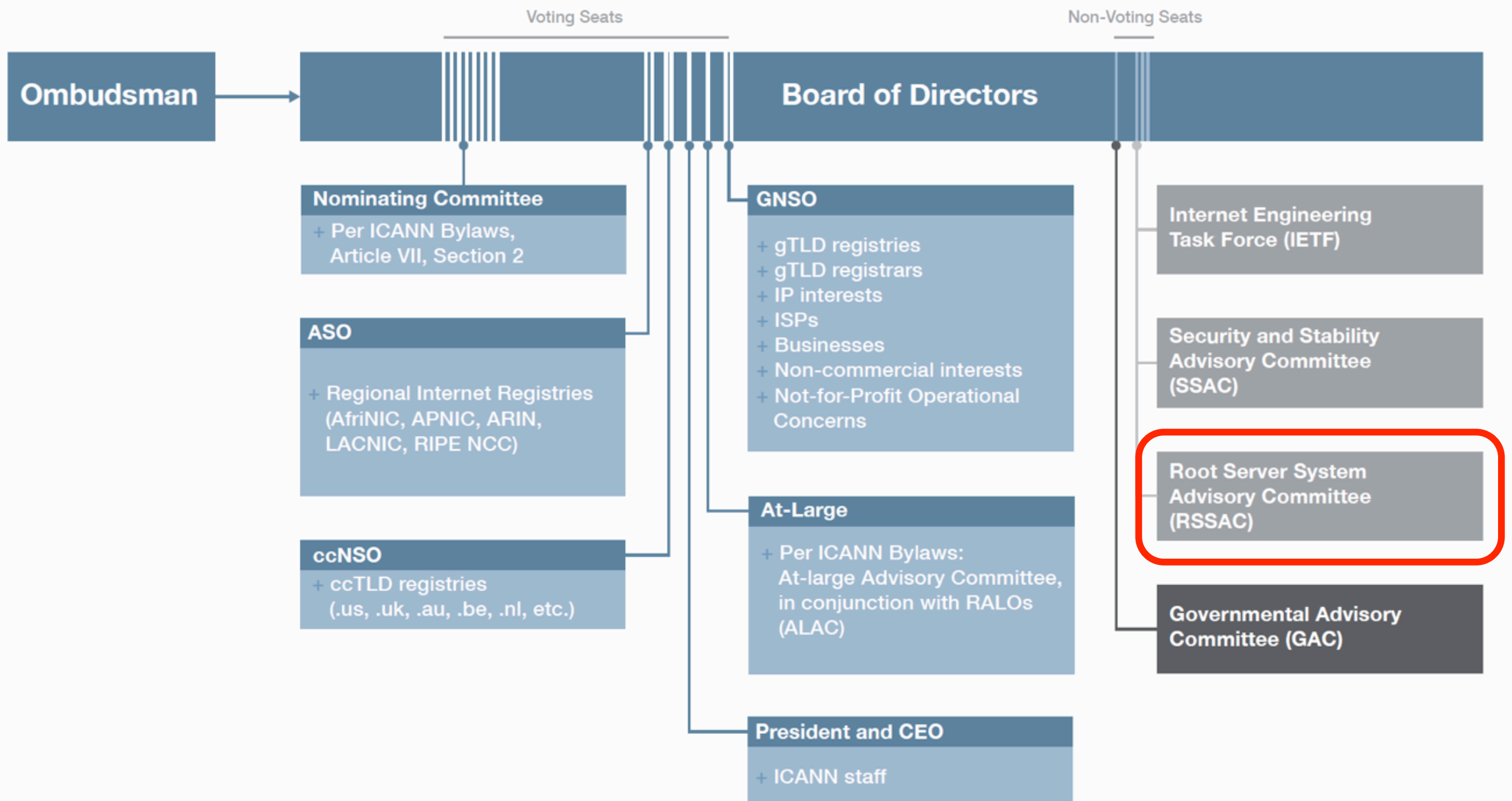
RSSAC public session

24 March 2014

ICANN 49, Singapore

Who We Are

- Root server operators
- Other stakeholders
  - Technical/operational orientation
  - DNS experts
  - ccTLD and RIR technical folks
  - Others (currently an open topic)

RSSAC is here …

What We Do

- Make sure root DNS queries are answered
  - as quickly and efficiently as possible
  - with the most up-to-date information available as distributed by IANA and Verisign
- Tell people what we do (and don't do)
- Liaisons to Nomcom, Board, etc.
- Provide DNS expertise and advice to the Board, staff, and community
  - DNSSEC, root scaling, etc.
  - Measurements, service expectations (more to come)

What We Don't Do

- Tell root server operators what to do– we hope that a role in forming the advice means they'll take it….

- Tell ICANN what to do– our advice is non-binding

- Policy regarding the contents of the root zone

- Mix other operations (registry, IX, etc.) with root name service– we all provide other services, but strictly separate

Root Server info

IANA Functions Transition Process

- IANA functions transition from USG is long-expected and welcome

- We expect to participate in the process along with other stakeholders

- Relevant principle for us to focus on: security, stability, and resiliency of the root zone distribution system for all Internet users

The "new" RSSAC

- Two-layer model:
  - Executive committee
  - "Caucus" made up of people with various forms of expertise

Executive committee

- Consists of one voting representative from each root server organization (= 12) + liaisons to and from various groups.

  - (Verisign operates two "letters", hence 12 orgs.)

- Creates initial processes and procedures.

- Selects and keeps track of work items.

- Appoints work parties from the Caucus.

- Publishes work party results.

- Appoints and accepts liaisons.

- Elects two co-chairs.

Current co-chairs

Prof. Jun Murai
WIDE project
M-root

Lars-Johan Liman, M.Sc.
Netnod
I-root

Current liaisons

- Outgoing:
  - ICANN Board
  - ICANN NomCom

- Incoming:
  - IANA
  - NTIA
  - Root Zone Maintainer (Verisign)
  - IAB
  - SSAC
  - GAC

Caucus

- Made up from people with various expertise – DNS protocol, DNS operations (authoritative/ resolver), registry operations, security, etc …
- Called upon to form work parties.
- Reviews all documents.
- Consensus driven.

Current Status

- Developing Operational Procedures document to define processes for:
  - Elections
  - Liaisons
  - Work party formation
  - Publication
- Editing session this week to progress work.

Proposed Publication Process

- Executive committee decides on work item.
- Sub-group of Caucus is established as work party.
- Work party produces draft document.
- Entire Caucus finalises document through consensus process.
- Executive committee publishes document.

Next steps

- Finish initial procedures document.

- Appoint Caucus.

- Publish "inherited" documents from "old" RSSAC.

- Establish better relationships with other ICANN bodies, in order to
  - Pick up issues that relate to root service.
  - Advice on root services issues early on.

RSSAC 001
RSSAC Recommendation on Service Expectations of Root Servers
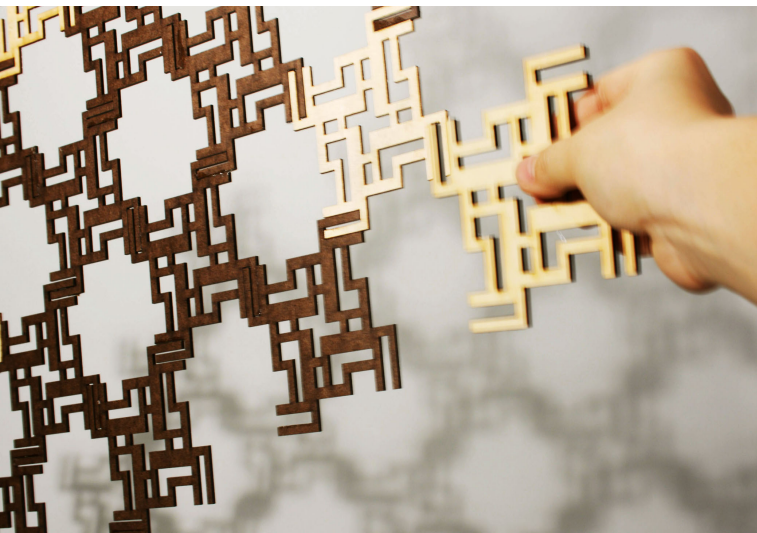
Document highlights that a diversity of approach is desirable in the root server system, and replaces earlier direction on implementation (RFC 2870) with a set of service expectations that root server operators must satisfy.

What is Included

- Definition of Service Provided by Root Servers
- Expectations of Root Server Operators
  - Infrastructure
  - Service Accuracy
  - Service Availability
  - Service Capacity
  - Operational Security
  - Diversity of Implementation
  - Monitoring and Measurement
  - Communication

RSSAC 002
RSSAC Recommendation on
Measurements of the Root Server System

The latency in the distribution system.

- How long to get a consistent zone file into all root servers?
- The size of the overall root zone
- How much data is in the root?
- The number of queries
- How many questions are asked?
- The query and response size distribution
- Question size and Answer size ratios (DDOS)
- The RCODE distribution
- What kinds of questions?
- The number of Sources seen
- Who is asking?
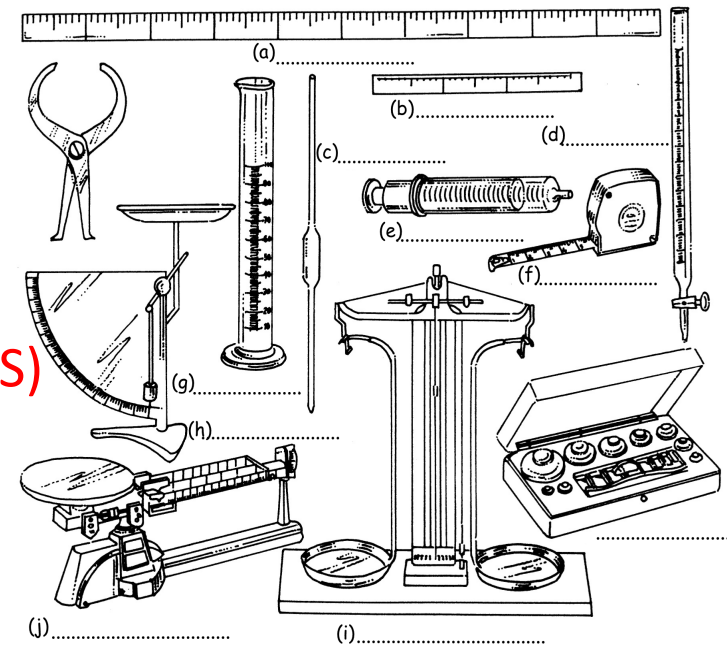
Explicitly not Measured

• Short/Bad/Malformed query

Outside the scope of this set of measurements

Concerns For This Work

- The single act of transferring the collected statistical data from widely deployed root server instances may affect the available bandwidth used to serve root zone queries.

- Collecting measurement data could pose as an operational impact on the root server instances.
  - Should any impact of service eventuate, measurement data will be discarded for the higher priority of service delivery.

- There are current DNS software logging limitations that inhibit the perfect collection and resolution of 'latency in the distribution system' values due to the lack of zone serial numbers in AXFR/IXFR logging statements.
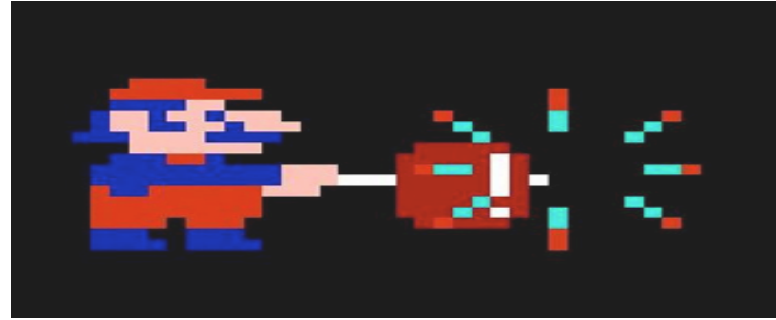
More Concerns

- The latency in the distribution system could potentially be more granular and also affect the time it takes for a root name server instance to commence serving from that zone upon receiving it, however in practical terms that reporting feature is not currently available in DNS software.

- TCP fragments are a nontrivial exercise to capture and provide meaningful statistics, it can be left to the individual root operator to include, or not include, TCP response size statistics.