

**DRAFT NOTES - RSSAC Caucus Kick Off Meeting  
22 March Sunday 2013, 15:30 CST – 17:00 CST  
Fairmont Hotel Dallas**

**Participants (incomplete list):**

Lars Liman - Netnod  
Jim Martin - ISC  
Russ Mundy - Parsons  
Kevin Jones - NASA  
Daniel Migault - Ericsson research  
Kaveh Ranjbar - RIPE NCC  
Colin Petrie - RIPE NCC  
Terry Manderson - ICANN  
Joe Abley - Dyn  
Warren Kumari - Google  
Jaap Arkuhaus - NL Net Labs  
Edward Lewis - ICANN  
Bruce Crabill - University of Maryland  
Akira Kato - Keio University  
Keith Mitchell - DNS OARC  
John - D root operations  
Davey Song - Beijing Internet Institute  
Declan Ma - ZDNS  
Wesley Wei Wang - Chinese Academy of Sciences  
Bill Manning - USC / ISI  
Wes Hardaker - Parsons  
Hiro Hotta - JPRS  
Sakia - University of Tokyo  
Paul Hoffman  
Shinta Sato - JPRS  
Kim Davies - ICANN  
Elise Gerich - ICANN  
Brad Verd - Verisign  
Shumon Huque - Verisign labs  
Duane Wessels - Verisign labs  
Matt Weinberg - Verisign  
Piet Barber - Verisign  
Bobby Cates - NASA  
Mark Kusters - ARIN  
Brian Dickson - Twitter  
Jim Cassell - DoD  
George Michelson - APNIC  
TBC - a student from Tsinghua University  
Dave Lawrence - Akami Technologies  
David Conrad - ICANN

Ashley Heineman – NTIA  
Adiel Akplogan – ICANN  
Paul Vixie – Cogent

**Support Staff:**

Steve Sheng  
Barbara Roseman  
Kathy Schnitt  
Carlos Reyes

**1. Welcome**

At 15:30, Liman opened the RSSAC caucus meeting and welcomed the ~50 participants. He previewed the agenda:

- A round of deeper introductions
- RSSAC Update – restructuring and internal work
- Discussion on the interaction between the formal committee and caucus
- Overview RSSAC 001 and RSSAC 002 and implementation status
- An update from the Caucus Root Zone TTL work party
- Brainstorm about future work items

**2. A round of deeper introductions of all participants (All participants)**

Participants went around the room to introduce themselves (names, affiliations, backgrounds, and research interests). See Participant section above for a list of participants and their affiliations.

Kaveh (RSSAC caucus membership committee) invited those participants not on the RSSAC caucus list yet to submit statements of interest for caucus.

**3. RSSAC Update – Restructuring and Internal Work**

Kevin Jones presented RSSAC 000 – the RSSAC operational procedure. The procedure,<sup>1</sup> which was completed in September 2014:

- Described the formal structure of RSSAC,
- Defines the purpose, principle and procedures for the caucus (including the caucus selection), and finally,
- Defined the publication procedures for RSSAC.

---

<sup>1</sup> <https://www.icann.org/en/system/files/files/rssac-000-op-procedures-25sep14-en.pdf>.

According to the operational procedure, the caucus is composed of all members of the RSSAC + additional subject matter experts appointed by the RSSAC. Its purpose is:

- To provide a well defined pool of motivated experts to whom the RSSAC can turn for getting work done;
- To provide transparency to the community at large about the people doing the work; and
- To provide a framework for the RSSAC Caucus participants to formalize their availability and to execute the work.

The caucus produces its work in an open fashion. All the contributors are publicly acknowledged in the document, their statements of interests are publicly posted<sup>2</sup> and referenced in the document.

#### **4. Information and discussion of interaction between the formal committee and the caucus**

Liman shared his thoughts on the interaction between the formal committee and caucus. He proposed the following:

- The primary working mode for the caucus is on mailing lists, teleconferences, and occasional face-to-face meetings.
- The work in caucus can be RSSAC induced and Caucus induced. Both are welcome, because RSSAC may not always have the widest view. For RSSAC induced work, it goes through a call for work party leaders and work party formation process. For caucus induced work, please ask RSSAC Chairs to bring it up.
- Face to face meetings are for sharing of information, discussion and brainstorming, currently thinking of once a year.
- These are starting point for discussion, and then once the discussion got to a steady stage, update the RSSAC 000.

#### **Discussions:**

Joe: There has been a long-standing perception that non-transparency of RSSAC and root server operators. How is RSSAC addressing this issue?

Liman: Yes. 1) By creating the caucus, 2) root operators need to interact with people a bit more, but that's not an RSSAC issue.

---

<sup>2</sup> see

<https://community.icann.org/display/RSI/RSSAC+Caucus+Statements+of+Interest>

Bill: One of the concerns that I continue to have for RSSAC and Caucus is its mission and sets of deliverables. It seems to the same sets of people, yet another DNS party. I am really interested in seeing the caucus differentiate itself, and look at the DNS system as a whole. Joe's call is for transparency. The large community of Internet users still thinks of this as a big kabob.

Jim: For the openness question, RSSAC now regularly participates at ICANN meetings. The root server operators are improving its accountability by implementing RSSAC advisories. I want to ask what do we need to change that perception and how to do that?

Liman: We also got requests from ICANN to participate in activities, such as the IANA stewardship transition.

Russ: ICANN has worked hard at having more engagement from the technical community. I hope that the individuals here will also participate in that way. ICANN is more policy oriented by providing sound technical principles and details will help the policy discussion.

Bill: I disagree with Russ. ICANN has a limited mandate. We should not wait ICANN go give problems to solve.

Russ: I have no disagreements Bill with caucus push forward issues and solutions.

David: I agree with Bill. If RSSAC caucus believes that there are technical issues to address, please do not wait for ICANN to ask. Please engage those issues, and provide advice to ICANN. With regard to technical expertise, we are actively engaged and trying to improve the technical stature at ICANN.

Davey: Transparency to me means to hear more voice and more public information sharing, so in addition to mailing list, we should listen more and have more discussions.

Wes: Caucus is an amazingly good venue to do bilateral collaboration. RSSAC can start caucus discussions with problem statements. But issues could be brought anywhere from this room (meaning the caucus). This is a room full of experts.

Kaveh: For transparency, RSSAC has been publishing the minutes of its monthly meetings. The mailing list archive is also open for anyone.<sup>3</sup>

Paul H: There is a larger community here. For example, people do not understand the root server system. How people outside this room can hear from us.

---

<sup>3</sup> <http://mm.icann.org/pipermail/rssac-caucus>.

## **5. RSSAC 001 Update – Service Expectations of Root servers**

Terry Manderson provided an update on RSSAC 001. This was a document in the long making; the caucus members participated are Joe Abley, Matt Larson, Joao Damas (external expert), Lars Liman, Brad Verd, Terry Manderson. Joe and Terry were document leaders.

RSSAC001 established a set of 18 service expectations that stakeholders might reasonably anticipate from the root server operators. Together with RFC 2870-bis, they replace early direction. The draft is finalized<sup>4</sup> in the RSSAC, but it is waiting to be published in tandem with RFC 2870-bis.

The recommendations are for each root server operator to publish the level of service they offer by responding to the expectations in RSSAC 001, and also advise RSSAC where those documentations are published, and when it is revised.

Liman gave an update on RFC 2870-bis. It removed operational requirements in RFC2870 and referenced RSSAC001 instead, it retained and updated protocol requirements and some deployment requirements for DNS root name service from RFC 2870.

It is currently waiting a new ID to address the 2 discuss positions from IESG.<sup>5</sup> Liman said he would do that, and hopefully get it shipped soon.

## **6. RSSAC 002: Advisory on Measurements of Root Server System**

Jim presented RSSAC002. This is a large RSSAC work party. Joe Abley, Alejandro Acosta, Jaap Akkerhuis, David Blacka, John Bond, John Crain, Brian Dickson, Shumon Huque, Daniel Karrenberg,\* Akira Kato, Peter Koch (external expert), Warren Kumari, Dave Lawrence, Lars Liman, Terry Manderson, Daniel Migault, Brad Verd, Paul Vixie, Duane Wessels, Romeo Zwart.

RSSAC 002 identified and recommended an initial set up measurements parameters for establishing a baseline and trends for the root server system. The intent is to form an early warning system that will assist in detecting and mitigating any effects associated with growing size of DNS root zone.

This is an initial set of measurement parameters. They are also well specified in the document on the exchange format. RSSAC recommended each root server operator implement the measurements, and that RSSAC itself will monitor the progress of the implementation.

---

<sup>4</sup> See <https://www.icann.org/en/system/files/files/rssac-001-draft-20nov14-en.pdf>.

<sup>5</sup> See <https://datatracker.ietf.org/doc/draft-iab-2870bis/>.

In the root ops meeting earlier today, each of the root ops reported their implementation status and plan of RSSAC 002 (see graph below). In particular, A/J, K, and L are publishing, every one else is collecting and the intended compliance date is 2Q to 4Q of 2015.

Root Letter	Current Status	Expected Completion
A/J	Publishing	Done
B	Collecting some	Q4 2015
C	Publishing some but not all (not in 002 format)	Q2 2015
D	Collecting	Q2 2015
E	Collecting	Q4 2015
F	Collecting subset	Q2 2015
G	Collecting subset	Q4 2015
H	Collecting	Q2 2015
I	Collecting subset	Q2 2015
K	Publishing (as of last week!)	Done
L	Publishing	Done
M	Collecting subset	Q2 2015

Discussion: Bill Manning: Q2 2015 likely after the DITL collection, right?

Jim: yes.

Paul H: I have read through the document and asked two people about the bucket size issue, and they are giving me different answers. So it may need to be clarified.

Liman: Good input, can you send it to the list for us to track?

## 7. Caucus work party update: RSSAC Advisory on Root Zone TTLS

Duane provided an updated on this work party. Essentially, the root zone TTL has not been changed from the beginning, and given that the Internet has gone through many changes over the past two decades, this work party is tasked to consider the following questions:

- Whether the current root zone TTLs are appropriate for today's environment
- Whether lowering the NS RRset TTL makes sense
- What are the impacts that TTL changes would have on the wider DNS

To do that the work party divided its work in 6 areas:

- Document the history of TTLs in the root zone
- Survey TTLs of TLDs:
  - o Compare TTLs of delegations in the root zone to the authoritative TTLs in TLD zones
  - o Compare DS (delegated) and DNSKEY (authoritative) TTLs
- Survey "max-cache-ttl" parameters of various recursive implementations
- Analyze DITL data for the extent that recursive resolvers honor TTLs
- Study the traffic effects of changing root zone TTLs
- Study interactions between the SOA refresh timer and serving stale data

The challenges that he saw however are:

- The lack of bandwidth from work party members to perform the analysis
- Realistic Modeling of the traffic effects of changing root zone TTLs is difficult
- Analysis of DITL data for the extent that recursive resolvers honor TTLs might not yield much useful data due to high noise to signal ratio

The TTL WP are looking for people (external experts) who have done DITL analysis to contribute. We already have one volunteer, but if you would like to contribute, please let me know. Also we are looking for copies of root zone prior to 1999.

### **Discussion:**

Jim: Is there anything we can do from this years' DITL analysis to help?

Duane: Yes, obviously the more coverage of the data the better, second is the faster that the data can be cleaned and uploaded to DNS-OARC the better.

Wei: A few years ago, we have written a paper on the TTL and its impacts.

Duane: Great! Could you share that paper?

Davey: Modeling the DNS is difficult; we have done some models to do that. Is your model going to be published?

Duane: Yes, it will be published along with the advisory.

Akira: In normal circumstances, changing TTL is ok. But you should also consider catastrophe cases. In early 2000s, the South Korea Internet was down for this reason. We could use that as a case study.

Duane: Good, can you summarize this to the mailing list?

Edward: I have done some DITL analysis in the past. There are a few things I learned and can share with you offline. In general [not captured]

Duane: ok, great!

Bill: Would part of your recommendation be that more measurements are needed because we lack data?

Duane: I don't see lack of data as an issue, but finding patterns in the data might be.

## 8. Brainstorm Session about future work items

Liman asked what are some of the future work items that people think are important. Some of the proposals are:

- ***Draft report on expectation and measurement of root servers from customers' side.*** RSSAC 001 and 002 focus on the expectation and measurement of root servers from root operator's side. But considering DNS resolution mechanism, the one-way measurement from root operators would not be able to reflect root service seen on the stub-resolvers or recursive servers. During the root mirror instances deployment in China, we found the end user side measurement is vital for root service evaluation and planning. We suggest that expectation and measurement from customer side should be considered, like what ICANN test new gTLD.
- ***Involve more parties in root operation, at least for emergency response and communication.*** Local root mirror hosts should be informed and could provide assistance. Some recursive operators should also be considered if they load zone file in cache as described in draft-ietf-dnsop-root-loopback-01.
- ***A briefing document on how root server system work.*** Daniel Karrenberg has done this a long time ago for ISOC, but probably needs to be updated.
- ***A stable reference why having local instances of root server in their regions. Including who should talk to and how to get contact with root server operators.***



- *How do you tell if a region is underserved? What can we do with respect to tools to help them?*
- *What is the appropriate and best number of root servers for the Internet ecosystem? What is the process?*

## **9. Logistics**

Liman proposed that the frequency for the RSSAC caucus face-to-face meeting should be around once a year and asked for feedback.

The feedback is that it is too early to determine this in the RSSAC kick off meeting.

The next step is to take the issue back to the mailing list and continue the discussion.

## **10. Adjourn**

The RSSAC caucus concluded its meeting without objections 17:08 CST.