SSR Review fieldwork planning

Initial draft: Alejandro Pisanty, July 11, 2011

This document: report of the Drafting Team Meeting of the SSR-RT, Washington, DC, US, July 21, 2011, Alejandro Pisanty

Issues/questions/Priority+Precedence	Primary responder/s	Additional notes on responders	Documents/Interviews/Interview Questions
1.1.Clarifying ICANN's SSR responsibilities ICANN has a complex mission, with certain direct SSR responsibilities for the DNS. However, in relation to the full range of SSR aspects for the DNS, ICANN's remit is limited to: 1) **control** over a few aspects, while being able to exert 2) **influence** over some other aspects, and having opportunities to take part in 3) **cooperative efforts** for many additional aspects further, a number of elements of the risk landscape of the DNS are outside ICANN's purview, yet must be considered by ICANN in contingency planning and in its outreach efforts meant to improve the health of the environment.			

1. Does ICANN have a clear, unambiguously stated remit for SSR?		***Not ask ICANN Chair*** ***SSR-RT ourselves*** ***External experts: (Manning):*** ***Jun Murai*** ***Calvin Browne*** ***Scott Bradner***	
2. What is ICANN's 'limited technical mission'?	ICANN CEO ICANN Chair GAC Chair SO and AC leads Experts Open	***Not ask ICANN Chair*** ***SSR-RT ourselves*** ***External experts: (Manning):*** ***Jun Murai***	

	consultation	***Calvin Browne*** ***Scott Bradner***	
3. Has ICANN, intentionally or unintentionally, deviated from the agreed / understood remit?	ICANN CEO ICANN Chair GAC Chair SO and AC	Same as above	

	leads Experts Open consultation		
4. How is each assigned task documented?	ICANN CEO, may delegate to COO, VPs, Security head	***(THIS REFERS TO TASKS IN THE SSR-RT PLAN)***	
5. Is the community perception of ICANN's role consistent with the assigned tasks and with ICANN's perception of these tasks?	ICANN CEO ICANN Chair GAC Chair SO and AC leads Experts Poll Open consultation		

1.2.Clarifying ICANN's relationships with SOs and ACs

ICANN's very different relationships with each SO / AC and with the contracted parties impinge significantly on the way ICANN can handle security, stability, and resilience of the DNS.

1.2.1. Relationship with RSSAC

ICANN's relationships with RSSAC and individual Root Server Operators should be clarified and the Terms of Reference of SSAC and RSSAC examined to identify further questions. These relationships and the procedures that the RSSAC and the individual Root Server Operators execute are critical for the stability, security, and resilience of the DNS.

The individual Root Server Operators' relations with other entities were documented by themselves in 2004. There is a need to document the present situation, and review whether they are properly adapted to the massive changes that have occurred since then, such as the incorporation of IDNs into the root, the opening of a process to incorporate new gTLDs in large numbers, a constant and explosive increase in ways to abuse the DNS for crime and other forms of misconduct, the introduction of DNSSEC, the use of Anycast and degree of diffusion/number of instances, and many others. Each Root Server Operator has contracts with at least one entity, but there is not a single entity that has contracts with all of them.

Diversity is a stated objective for the Root Server Operator community. This Review must establish whether the balance between the benefits and the risks arising from diversity are being properly managed.

The Root Server Operators see their relation with IANA as of primary importance and have been reluctant to engage in a contract with ICANN as some of them consider ICANN a potentially temporary contractor of the IANA function.

The initial hypothesis that ICANN's lack of contracts with Root Server Operators would

destabilize security may need to be revisited or studied with much further elaboration. **6.** The Review must tease out how ICANN defines its goal of 100% uptime for the DNS, the L-Root Server and the .INT servers, and what and how it can actually be achieved. For this the null hypothesis is that the issue can only be discussed rationally if in parallel to a discussion of scope of ICANN, the DNS, and the goals themselves. **44.** Is the number of 13 root servers the true limit, esp. with IPv6 addresses and packets larger than 512 bits for the number of the root? Is it the right architecture? **45.** Are the 13 in the right places and for the right reasons? Are all of them performing and are they fulfilling a mission optimally? The asymmetries in the number of Anycast servers supported by each root server suggests the need to review (see http://www.root-servers.org/) Questions to consider:			
Is the number of 13 root servers the true limit, esp. with IPv6 addresses and packets larger than 512 bits for the number of the root? Is it the right architecture? Are the 13 in the right places and for the right reasons? Are all of them performing and are they fulfilling a mission optimally? The asymmetries in the number of Anycast servers supported by each root server suggests the need to review (see http://www.root-servers.org/)			

45 bis. What is the accountability of each of the root-server operators?			
How does ICANN define its goal of 100% uptime for the DNS?			

7. Are the current 2004 ICANN-RSSAC documents still suitable and relevant for the current situation of the expanding gTLD landscape?	ICANN CEO ICANN Chair GAC Chair RSSAC leads SSAC leads Experts Interested parties – gTLD, ccTLD, security community; direct or through SO, AC leads? Open consultation		
8. Is the relationship between ICANN and RSSAC the correct one and if not, what are the gaps?	ICANN CEO ICANN Chair GAC Chair		

	RSSAC leads SSAC leads Experts Interested parties – gTLD, ccTLD, security community; direct or through SO, AC leads? Open consultation		
9. Is the relationship between the two parties well documented and understood?	ICANN CEO ICANN Chair GAC Chair RSSAC leads SSAC leads Experts Interested		

	parties – gTLD, ccTLD, security community; direct or through SO, AC leads? Open consultation		
10. Is there proper diversity of nameserver software amongst root-server operators?	ICANN CEO ICANN Chair GAC Chair RSSAC leads SSAC leads Experts Interested parties – gTLD, ccTLD, security community; direct or through SO,		

	AC leads? Open consultation		

### 1.2.2. Relationship with SSAC The key remit of the SSAC is to advise the board on 'matters relating to the security and integrity of the internet's naming and address allocation systems', looking at operational, administrative and registration-related issues. The SSAC creates reports, advisories and comments in response to requests from the ICANN board, ICANN committees or committee task forces. The SSAC has recently undergone a review and completed an 'Improvements Implementation Plan' which was implemented and completed by 18 March 2011.			
11. Is the current ICANN-SSAC relationship correct and appropriate for mitigating the risk landscape?	ICANN CEO ICANN Chair		

	GAC Chair SSAC Chair SO and AC leads Experts Public consultation		
12. Have SSAC fully implemented the findings of the SSAC review?	ICANN CEO ICANN Chair SSAC Chair		
13. Is SSAC's remit correct or has it become too wide?	ICANN CEO		

	ICANN Chair SSAC Chair GAC Chair SO and AC leads Experts Public consultation		

14. Is there confusion between the remit of SSAC and the remit for RSSAC, particularly where root server operations and scaling are concerned?	ICANN CEO ICANN Chair SSAC Chair RSSAC Chair Experts Public consultation		

1.3.Understanding the ICANN SSR plan The ICANN SSR plan for 2011 has improved over previous versions by introducing consideration of levels of influence that ICANN exerts over the parties which are able to generate and mitigate risks to the DNS. However, the plan is not specific enough when it comes to identifying responsibilities, priorities and goals, and tracking them. Budget clarity and exact breakdown of expenditures are lacking and there is no tracking foreseen. Questions and issues to consider:			
15. Is the SSR plan clear and unambiguous?	ICANN Chair ICANN CEO GAC Chair SO and AC leads Experts Public consultation		

16. Is the plan consistent with ICANN's 'limited technical mission'?	ICANN Chair ICANN CEO GAC Chair SO and AC leads Experts Public consultation		
17. Is the SSR plan SMART? (if so, describe / explain how)	ICANN Chair ICANN CEO GAC Chair SO and AC		

	leads Experts Public consultation		
18. Are the SSR plans for specific areas overly enthusiastic?	ICANN Chair ICANN CEO GAC Chair SO and AC leads Experts Public consultation		
19. Is the SSR plan effective in dealing with actual and potential challenges and threats to the DNS?	ICANN Chair ICANN CEO GAC Chair SO and AC leads Experts		

	Public consultation		
20. Is there a structured process for documenting and measuring the implementation of the SSR plan?	ICANN CEO SSAC Chair		
21. Is there a good linkage between the SSR plan and the Strategic plan? Clarity will be explored.	ICANN CEO SSAC Chair GAC Chair SO and AC leads Experts Public consultation		
22. Is the comment from the Business Users' Community correct in demanding more focus on contract enforcement?	ICANN CEO ICANN Chair GAC Chair SO and AC		

	leads Contracted parties Experts ALAC Chair Public Consultation		
23. Is the process for the creation of the SSR Plan sufficiently transparent?	ICANN CEO SSAC Chair GAC Chair SO and AC		

	leads Experts Public consultation		
1. Implementation of SSR plan and operational SSR matters The review will consider the extent to which ICANN's existing SSR plan has established effective strategies to enhance the security, stability and resiliency of the DNS. It also will analyze ICANN's processes for addressing SSR issues in its budget, organization, strategic plans and policy development process. **1.1. Implementing the ICANN SSR plan** ICANN is responsible for not only crafting a plan, but also implementing the measures and activities contained within the document. These measures should have clear and actionable plans and be linked to an organizational structure that is measured against its success in implementing the plan. It's is clear that responsibilities for implementation lie across different areas within the ICANN organization, but the plan should be able to traverse these and provide clarity around roles and responsibilities. Questions and issues to consider:			
24. Is the resource allocation for SSR clear and how is its performance measured?			
25. Is it clear that ICANN has been implementing the stated SSR activities and are these activities well			

documented?			
26. How does ICANN operationally manage day-to-day SSR functions?			
27. Should more effort be given to prioritize initiatives in the SSR plan?			
28. Special expertise in cryptography is not mentioned in SSR plan, so where is the need?			
29. Why was security for the ICANN meeting in Nairobi charged to the SSR budget instead of to ICANN's meeting budget?			

1.2. Managing the root zone ICANN is tasked with managing the root zone through a relationship with both Verisign and IANA. All changes to the root zone are also approved by the US government body, the NTIA. Against this complex framework, ICANN has set itself the goal of '100% DNS uptime'. The addition of new gTLDs, in large numbers, to the root zone will have a significant impact on these relationships as well as the impact of technologies such as IPv6 and DNSSEC. Questions and issues to consider:			
30. Are the rules for root zone editing in the triangular relationship ICANN/NTIA/Verisign secure enough? Do they contribute to stability and resilience of the DNS within ICANN's scope and mandate? (What is the risk analysis for these processes?)	ICANN Chair ICANN CEO IANA Lead SSAC Chair NTIA SO and AC leads Stakeholders – ccTLD, gTLD, IETF, IAB Experts		

31. Which are the relevant processes that affect IANA?	ICANN Chair ICANN CEO IANA Lead SSAC Chair NTIA		

	SO and AC leads Stakeholders – ccTLD, gTLD, IETF, IAB Experts		
32. Which criteria does IANA have and how are they applied?	ICANN Chair IANA lead Stakeholders – ccTLD, gTLD, IETF, IAB		
33. Is there contention between NTIA and IANA, and if so, why? Does it have a bearing on SSR of the DNS? How should this be managed?	ICANN Chair IANA lead Stakeholders – ccTLD, gTLD, IETF, IAB		

	RSSAC Lead GAC Chair NTIA SSAC Chair Experts		
34. Is the relationship between ICANN and IANA clear?	ICANN Chair IANA lead Stakeholders – ccTLD, gTLD, IETF, IAB RSSAC Lead GAC Chair NTIA SSAC Chair Experts		
35. Decisions made by NTIA are beyond the scope of the review; ICANN's management of them is within the			

scope of the review and has a high priority.			
36. Is ICANN properly managing the risk of not getting the IANA contract?	ICANN Chair IANA lead Stakeholders – ccTLD, gTLD, IETF, IAB RSSAC Lead GAC Chair NTIA SSAC Chair SO and AC Leads Experts		
37. How is ICANN managing risks coming from changes in the IANA contract?	ICANN Chair ICANN CEO		
38. What is in the NTIA / ICANN relationship that may endanger SSR and what factors of this relationship enhance SSR of the DNS?	ICANN Chair IANA lead Stakeholders –		

	ccTLD, gTLD, IETF, IAB RSSAC Lead GAC Chair NTIA SSAC Chair Experts Public consultation		
39. Is there a contingency planning for risks in that relationship?	ICANN Chair ICANN CEO SSAC Chair IANA Lead NTIA		
40. Complaints by ccTLD managers with respect to IANA and the processing of requests for changes in the root may indicate or constitute risk factors (including actual and perceived consequences of components of the legal framework such as OFAC) – does ICANN have enough control over the process and the risks? Are the risks properly managed?	ICANN Chair IANA lead Stakeholders – ccTLD, gTLD,		

	IETF, IAB RSSAC Lead GAC Chair NTIA SSAC Chair Experts Public consultation		
41. How does ICANN react in case of high risk? What procedures are in place? How, in what depth, and with what frequency are they tested?	ICANN CEO ICANN Chair SSAC Chair RSSAC Lead		
42. How does ICANN inform stakeholders in case of high risk?	ICANN CEO ICANN Chair		
43. Are actions from the Board foreseen in case of high risk? Do procedures established for contingency management include provisions for what to do if decisions of the highest level are required but cannot be readily	ICANN CEO		

achieved by regular procedures?	ICANN Chair		
RISK OF CAPTURE			
General questions			
Identity if needed, anonymity if relevant			
Demographics if needed			
Establish level of authority for reply: - expertise - institutional position - conflicts of interest, bias - predictable repetition with others, redundancy - analytical framework applied			
What are the 5 most important risks the global DNS faces? (explain; if possible include source of risk, nature of risk – vulnerability, threat, impact – and management.)			
What is ICANN doing particularly well to manage DNS risks? (list 3) (explain; if possible include source of risk, nature of risk – vulnerability, threat, impact – and management.)			
What are the 3 risks to the DNS that are being most poorly managed?) (explain; if possible include source of risk, nature of risk – vulnerability, threat, impact – and management.)			

Work Packets

Work packet no	Questions included	Title	People	Hours
1	1, 2	Clear SSR Remit	McCalla, Xiaodong	|5
2	3	Deviation from SSR mandate	McCalla, Xiaodong	10
3	4	Assignment of SSR tasks	McCalla, Xiaodong	10
4	5	Community perceptcion	McCalla, Xiadoong	8
5	6	DNS Availability	Pisanty	10
6	7, 9	ICANN-RSSAC relationship docs	Pisanty	12
7	8	ICANN-RSSAC relationship right? & gaps	Pisanty	10
8	44,45	Number of root servers, architecture	Manning	30
9	10	Software diversity	Hannigan	20
10	11, 12, 13, 14	ICANN-SSAC relationship	Cake	20
11	15, 17, 18	SSR plan clear, consistent, SMART	Brueggeman	8

12	16	SSR plan consistent with mission	Brueggeman	8
13	19	SSR plan effective re challenges & threats	Manning	20
14	20, 21	Process to document, measure SSR plan/linkage to strategic plan	Brueggeman	12
15	22, 23	Contract compliance, transparency of process for SSR plan	Brueggeman	8
16	24, 25, 26, 27, 28, 29	Implementation, resources	McCalla, Pisanty	30
17	30, 31, 33, 37, 38, 39, 40	Root zone editing, NTIA-IANA procedures	Manning, Pisanty	30
18	41, 42, 43	ICANN response to high risk situations	Rafting	24
19	ALL	Report framework	Brueggeman	24

Participant	Work Packet	Hours
Manning	8, 13, 17	80
McCalla	1, 2, 3, 4, 16, 19	73
Brueggeman	11, 12, 14, 15, 19	42
Pisanty	5, 6, 7, 16, 17, 19	92
Hannigan	9	20

Rafting	18	24
Cake	10	20
Xiaodong	1, 2, 3, 4	43

CALENDAR

2 weeks (approx August 5, 2011) Teleconference for progress assessment

4-5 weeks (approx Sept 9, 2011) Checkpoint of progress and teleconference. Substantive progress must appear.

6-7 weeks teleconference

8 weeks (end of September) Checkpoint

10 wees (3 weeks before Dakar meeting) preliminary document, document covering all subjects