Implementation Report on the Security, Stability and Resiliency of the DNS Review Team Recommendations

The following tables show the current status of implementation for the 28 SSR Review Team recommendations adopted by the ICANN Board, as aligned with ICANN's FY 2014 management delivery areas. **Report Recommendations Implementation** **As of January 2015**	*Key:* **Complete** √ or 🟢 **In Progress** ○ or 🔵 **In Planning** ◊ or 🟣		
	Topic	**Summary of Implementation activities**	**Milestones & Due Dates**
	SSR Review Team Recommendations		
1 🟢	Affirmation of Purpose – ICANN's Remit, Mission	ICANN should publish a single, clear and consistent statement of its SSR remit and limited technical mission.	√ Public comment was taken on a <u>draft statement between May-Sept 2012</u>. √ The draft statement was <u>revised on 4 Oct 2012</u>. √ The updated <u>statement</u> was published on ICANN's website and incorporated in the <u>FY 14 SSR Framework</u> and is part of SSR SOP in which SSR Framework and statement is periodically reviewed and updated as needed. This statement also has been incorporated into other ICANN documentation.
2 🟢	Affirmation of Purpose – ICANN's Remit, Mission	ICANN's definition and implementation of its SSR remit and limited technical mission should be reviewed in order to maintain consensus and elicit feedback from the Community.	√ The <u>statement</u> (and <u>SSR Framework</u>) informed ICANN's new <u>Strategic Plan for FY2016—2020</u>, which reflects strategic SSR objectives, goals and key success factors (KSFs) for the next five years and was result of input and review by the ICANN community, Staff and Board. SSR elements are highlighted <u>here</u>. √ This, in turn, informed the new <u>Five-Year Operating Plan</u>, which also was developed with community input and includes SSR key performance indicators (KPIs), dependencies, five-year phasing, and portfolios. SSR elements are

			highlighted here.
			√ The Annual Operating Plan & Budget, which is derived from the Five-Year Operating Plan and from community input, is being developed for FY16 and will include details on proposed SSR activities and expenditures. More information is posted here.
			√ Periodic review of the SSR Framework, including the SSR role and remit statement, are part of the SSR SOP, and also will be reviewed by the next SSR RT in 2015.
			This is a recurring component as ICANN continues to refine the scope of its SSR activities (within its mission) to meet changing demands. The new structure of the Identifier System Security, Stability and Resiliency Team (ISSSR, previously the ICANN Security team) and ICANN's new Chief Technology Officer help ensure ICANN's SSR remit and scope continually evolves.
3 ●	Internationalization – Terminology and Relationships	Once ICANN issues a consensus-based statement of its SSR remit and limited technical mission, ICANN should utilize consistent terminology and descriptions of this statement in all materials.	√ Consistent terminology and descriptions related to ICANN's SSR role and remit have been publicized and are encouraged in all ICANN material. √ Key terms are added to ICANN's public glossary on an ongoing basis as part of SOP. As SSR activities evolve, terminology and descriptions will be updated as part of SOP.
4 ●	Internationalization – Terminology and Relationships	ICANN should document and clearly define the nature of the SSR relationships it has within the ICANN Community in order to provide a single focal point for understanding the interdependencies between organizations.	√ (Phase I) SSR relationships have been defined and publicized. As part of SSR SOP, this work will be updated periodically to keep pace with SSR activities. ○ (Phase II) In planning stage – building on above, provide additional detail on formal relationships ICANN has with key organizations. Target completion date for planning: April 2015. Closure date TBD. √ (Phase II) Memorandums of Understanding that indicate roles and responsibilities relevant to SSR have been signed with numerous entities; the list is posted here and will be updated as part of SOP, as needed. ○ (Phase II) Extract and catalogue SSR-related elements of MOUs; Target

			completion date: May 2015. Closure date TBD.
5 🔵	Internationalization – Terminology and Relationships	ICANN should use the definition of its SSR relationships to maintain effective working arrangements and to demonstrate how these relationships are utilized to achieve each SSR goal.	√ (Phase 1) Reporting on ICANN's progress toward SSR-related KSFs and KPIs involving SSR relationships is SOP, and can be found in ICANN's regular project management reporting, operating plans, SSR Framework, and SSR quarterly reports. ○ (Phase II) Next SSR Framework/report on SSR activities will include information on how key relationships noted in #4 are used to achieve SSR goals (as part of SOP). (See above; target completion date: May 2015).
6 🔵	Multistakeholder Model Evolution	ICANN should publish a document clearly outlining the roles and responsibilities for both the SSAC and RSSAC in order to clearly delineate the activities of the two groups.	√ Roles and Responsibilities of SSAC are reflected in ICANN's Bylaws and defined in SSAC's Operating Procedures. √ Roles and Responsibilities for RSSAC are reflected in an updated charter contained in ICANN's Bylaws. ○ SSAC and RSSAC have been asked to reflect their roles and responsibilities in one document. Target completion date: February 2015.
7 🟢	Operations Excellence - Objectives	ICANN should build on its current SSR Framework by establishing a clear set of objectives and prioritizing its initiatives and activities in accordance with these objectives.	√ The Strategic and Operating Plans (see #2) were informed by SSR Framework and reflect SSR priorities, objectives and activities. This is SOP for development of ICANN plans and budgets. √ SSR-related priorities, objectives and activities are reported on regularly as part of SOP, including in ICANN's regular portfolio management reporting and SSR quarterly reports.
8 🟢	Operations Excellence - Objectives	ICANN should continue to refine its Strategic Plan objectives, particularly the goal of maintaining and driving DNS availability. Clear alignment of Framework & Strategic Plan.	√ The Strategic and Operating Plans (see #2) were informed by SSR Framework and reflect SSR priorities, objectives and activities. This is SOP for development of ICANN plans and budgets, in which SSR alignment is reviewed as annual plans/budgets are developed. √ Progress on SSR-related priorities, objectives and activities are reported on regularly as part of SOP, including in ICANN's regular portfolio management reporting and SSR quarterly reports.

9 ●	Operations Excellence – Standards and Compliance	ICANN should assess certification options with commonly accepted international standards (e.g. ITIL, ISO and SAS-70) for its operational responsibilities. ICANN should publish a clear roadmap towards certification.	√ ICANN's implementation of DNSSEC in the root has achieved SysTrust certification. ○ Staff certification options initially focused on ITIL certification of DNS engineering staff (described below). New CTO is reviewing certification needs and options, and a new certification roadmap will be developed and implemented. Target completion date for planning: May 2015. Closure date TBD. A draft roadmap was established for the implementation of ITIL -- full adoption of ITIL practices with 50% of DNS Engineering staff being ITIL certified. Evaluation of implementation and funding options is underway.
10 ●	Operation Excellence – Standards and Compliance	ICANN should continue its efforts to step up contract compliance enforcement and provide adequate resources for this function. ICANN also should develop and implement a more structured process for monitoring compliance issues and investigations.	√ Regular public reporting of compliance activities are part of SOP; detailed information is available here. √ Complaints migrated to icann.org and automated; bulk complaint tool launched; Pulse Survey implemented; WHOIS inaccuracy qualities check launched. √ Complaints submission processes & FAQs to address new 2013 RAA requirements completed. √ Compliance auditing and outreached programs in place. √ New positions created to ensure fulfillment of goals and objectives in this area.
11 ●	Operation Excellence – new generic TLDs and IDNs	ICANN should finalize and implement measures of success for new gTLDs and IDN fast track that expressly relate to its SSR-related program objectives, including measurements for the effectiveness of mechanisms to mitigate domain name abuse.	○ Planning is underway to identify and implement measures of success for new gTLDs and IDN fast track that expressly address SSR-related program objectives. Activities outlined below are being factored in. Target completion date for planning: April 2015. Closure date TBD. New gTLDS ○ The community has discussed several sets of measures in planning for the review specified in 9.3 of the AoC on the impact of the New gTLD Program on competition, consumer trust, and consumer choice (CCT Review). These include, for example, collection of data on domain takedowns, phishing incidences, fraud, and software compatibility. In some cases, these metrics are recommended for consideration by the Review Team to determine the feasibility and value of the

specific metric. The Implementation Advisory Group for Competition, Consumer Trust and Consumer Choice (IAG-CCT) has completed its work. The CCT Review is expected to launch mid-2015 and finalize measures in mid-2016. Target completion date: TBD.

○ Specification 11 of the Registry Agreement signed by all new gTLD registries requires technical analysis and reporting on security threats, and work is ongoing, including conferring with the GAC & Registries, to develop a framework for community review and comment in this area, and then finalize. Target completion date: Oct. 2015 (May 2015 for public comment)

√ Security and stability evaluation mechanisms for applied-for IDN labels across the new gTLD and IDN ccLD Fast Track Programs are in place.

As defined in the Final Implementation Plan, the IDN ccTLD Fast Track Program includes a two-panel mechanism for technical string evaluations: (i) the DNS Stability Panel, which reviews all applied-for labels to ensure their security and stability, and their string similarity against existing, reserved and applied-for labels, and (ii) an external and independent Extended Process Similarity Review Panel (EPSRP), based on the Guidelines for the Extended Process Similarity Review Panel, which performs a second string similarity review for the requested strings and provides experimental details and results via reports such as published for the first set of evaluations.

Per the new gTLD Program Applicant Guide Book, two separate panels were organized for security and stability review for all applied-for labels, focused on: (i) security and stability evaluation of the strings, and (ii) string similarity review against existing, reserved and applied-for labels.

IDNs

○ For both IDN gTLDs & ccTLDs, the IDN TLD Program is currently in the development stage of the following projects:

The Label Generation Rule set (LGR) for the root zone is being developed to have a conservative mechanism to define IDN TLD labels, focused on DNS stability

			and security. Target completion date: Oct. 2015 (first version of LGR, covering at least Arabic script)
			LGR will also allow community to validate potential TLD labels transparently and determine their variants in a consistent and predictable way, to manage end-user confusion or security. The LGR will be based on the Maximal Starting Repertoire (MSR), which applies the letter-principle to shortlist candidate code points from IDNA2008.
			○ MSR-1 and its upwardly compatible version MSR-2 have been released including 22 and 28 scripts respectively. The MSR will be further refined using a conservative Procedure decided by the community to develop the LGR. MSR-2 was released for public comments in Dec. 2014.
			○ Arabic and Chinese community based Generation Panels have been seated and are currently working on respective script proposals for the LGR. Target completion date: June 2015
			○ A LGR tool is being made available to allow Generation Panels and the community to develop and use Label Generation Rule-set in a new machine-readable XML-based format. Target completion date: Dec. 2015
			○ Annual review of the IDN ccTLD Fast Track Process has been initiated. This includes getting community feedback on matters related to string similarity, effectiveness of EPSRP, inclusion of name collision related recommendations for IDN ccTLD applicants and formal and machine-readable definition of the IDN tables being submitted. Target completion date: July 2015.
12 ●	Multistakeholder Model Evolution	ICANN should work with the Community to identify SSR-related best practices and support the implementation of such practices through contracts, agreements and MOUs and other mechanisms.	√ A range of ICANN activities to advance identification and communication of SSR-related best practices are part of the SOP. √ ICANN staff has a resource locator page that the Security Team maintains ICANN community member security awareness. The page identifies web sites, organizations, and government resources, in some cases in multiple languages, that have developed security awareness education, training, and best practices or guidelines for individuals and members of collaborative communities. Additional

			information related to best-practices is linked here and here.
			√ ICANN Staff periodically informs SOs/ACs of best-practices and invites these groups to identify additional, targeted best-practices for their constituents. As part of SOP this will be done annually and publicly documented.
			√ MoUs with numerous international entities address SSR-related best practices.
			√ Several Regional Engagement Strategies include SSR best practices.
			√ ICANN staff works with the Anti-Phishing Working Group (APWG) Internet Policy Committee to publish recommendations for web application protection, has engaged in development of resources for security awareness (through SANS Securethehuman.org activities and with NCA Stop.Think.Connect). Organization of American States (OAS) has released a 2014 Latin American & Caribbean Cybersecurity Report which includes best practices recommendations for countries in the region and includes a section contributed by ICANN. ICANN Staff also is participating through the Commonwealth Cybercrime Initiative.
			√ The revised new gTLD registry agreement contains additional language on SSR best practices.
13 🟢	Multistakeholder Model Evolution	ICANN should encourage all Supporting Organizations to develop and publish SSR-related best practices for their members.	√ As part of SOP, ICANN staff contacts all SOs and ACs to encourage identification and publication of a best practices repository page that is responsive to their constituencies. The ccNSO currently publishes SSR-related best practices information for their members.
			√ ICANN staff engages in a variety of ongoing activities to encourage global use of SSR best practices, as part of SOP (see #12).
			√ Activity in this area is ongoing as part of SOP and ICANN builds on its activities annually. In 2015, for example, ICANN anticipates the creation of a set of resources of best practices for securing collaborative community assets. These resources will help SOs and ACs make informed decisions regarding identity management and data protection. From these, SOs and ACs could set requirements for how community assets should be made secure, stable and resilient.

14 ●	Internationalization –Outreach and Engagement.	ICANN should ensure that its SSR-related outreach activities continuously evolve to remain relevant, timely and appropriate.	√ Outreach activities have been expanded and are reviewed annually. The Security team provides both a service function to ICANN's Global Stakeholder Engagement team as subject matter experts, and a community function in outreach and engagement in SSR matters. A new Engagement Interface allows the community to see upcoming SSR and related outreach and engagement activities. This is an on-going obligation.
15 ●	Operations Excellence – Risk Management and Threat Mitigation	ICANN should act as a facilitator in the responsible disclosure and dissemination of DNS security threats and mitigation techniques.	√ ICANN published a Coordinated Vulnerability Disclosure document in 2013. While the framework and SOP is in place, staff notes that because facilitation of responsible disclosure is an on-going obligation the work in this area is ongoing. √ Staff collaborates with operators and trusted security community entities on DNS security threats and mitigation techniques. This is related to Recommendation 28.
16 ●	Internationalization –Outreach and Engagement.	ICANN should continue its outreach efforts to expand Community participation and input into the SSR Framework development process. ICANN also should establish a process for obtaining more systematic input from other ecosystem participants.	√ Outreach activities and processes solicit input on the SSR Framework have been expanded and are part of ICANN's SSR SOP; activities are ongoing and are reviewed annually. For example: the Security team's ongoing work with security communities including the Anti Phishing Working (APWG), the Messaging, Malware and the Mobile Anti-Abuse Working Group (MAAWG) has resulted in participation by members of those communities in SSAC; through engagement with the International Criminal Law Network (ICLN) and Commonwealth Cybercrime Initiative (CCI), the Security team emphasizes the value of multistakeholder approaches to cybersecurity issues. √ Several Regional Engagement Strategies include SSR best practices and SSR topics are addressed by ICANN across all global regions. √ This is related to Recommendations 4, 5 and 14. √ At the request of stakeholders, the Security team supports a variety of capability-building initiatives, such as DNSSEC training, ccTLD attack and contingency response training, law enforcement training, outreach at Network Operator Group meetings such as Caribbean Network Operators Group (CaribNOG), Middle East

			Network Operators Group (MENOG), among others.
17 🟢	Operations Excellence – Transparency	ICANN should establish a more structured internal process for showing how activities and initiatives relate to specific strategic goals, objectives and priorities in the SSR Framework.	√ See #2 for information on how activities and initiatives relate to SSR priorities, objectives and goals are integrated into ICANN's planning, budgeting and project reporting efforts.
18 🟢	Affirmation of Purpose – ICANN's Remit, Mission	ICANN should conduct an annual operational review of its progress in implementing the SSR Framework and include this assessment as a component of the following year's SSR Framework.	√ Implemented as part of the [FY 13 & FY 14 SSR Frameworks](#) and will be repeated annually. The previous status of SSR RT implementation was published in [Appendix C of the ATRT2 Report](#)
19 🟢	Operations Excellence – Risk Management and Threat Mitigation	ICANN should establish a process that allows the Community to track the implementation of the SSR Framework. Information should be provided with enough clarity that the Community can track ICANN's execution of its SSR responsibilities.	√ The publication of the annual SSR Framework now includes a status update on the previous fiscal year Framework. ICANN's regular project management reporting, and operating plans and budgets provide more details on SSR (see #2 for more information).
20 🔵	Operations Excellence – Transparency	ICANN should increase the transparency of information about organization and budget related to implementing the SSR Framework and performing SSR-related functions.	√ (Phase I) A [framework](#) is in place to provide public information about SSR-related plans, budgets and activities (as outlined in #2). Periodic SSR activity [reporting](#) augments this public information. ○ (Phase II) Exploration underway to identify mechanisms that provide more detailed public information on SSR-related expenditures across multiple ICANN departments. Target completion date: May 2015.
21 🔵	Operations Excellence – Structure	ICANN should establish a more structured internal process for showing how organization and budget decisions relate to	√ (Phase I) ICANN's [planning process](#) integrates the SSR Framework and reports on SSR activities and expenditures (see #2) √ (Phase II) Exploring ways to annually (as part of SOP) identify all key SSR-

		the SSR Framework, including the underlying cost-benefit analysis.	related activities and expenditures, and how ICANN might address the call for "underlying cost-benefit analysis" in this complex area. Target completion date: May 2015.
22 🔵	Operation Excellence – new generic TLDs and IDNs	ICANN should publish, monitor and update documentation on the organization and budget resources needed to manage SSR issues in conjunction with introduction of new gTLDs.	√ (Phase I) A framework is in place to provide public information about SSR-related plans, budgets and activities (as outlined in #2). ○ (Phase II) (Connected to #11, #20, #21) Planning is underway to regularly publish organization and budget related information for new gTLD SSR issues. Target completion date for planning: April 2015. Closure date TBD.
23 🟢	Multistakeholder Model Innovation	ICANN must provide appropriate resources for SSR-related Working Groups and Advisory Committees, consistent with the demands placed upon them. ICANN also must ensure decisions reached by Working Groups and Advisory Committees are reached in an objective manner that is free from external or internal pressure.	○ A publicly documented budget process for SO/AC input on the budget is SOP; for example, these requests have been published for FY 15. √ ICANN has in place funding allocated to allow SSAC and RSSAC to conduct work. The support funding has never been linked to or conditioned by any performance/output/content evaluation, thus maintaining adequate independence. √ Established processes and procedures for WGs and ACs also help ensure that their decisions are reached in an objective manner that is free from external or internal pressure.
24 🟢	Affirmation of Purpose – ICANN's Remit, Mission	ICANN must clearly define the charter, roles and responsibilities of the Chief Security Office Team.	√ Previously Implemented with updated Security team page on 4 October 2012 and publication of the FY 13 SSR Framework. The Identifier Systems Security, Stability & Resiliency (ISSSR) Team's roles and responsibilities are posted.
25 🟢	Operations Excellence – Risk Management and Threat Mitigation	ICANN should put into place mechanisms for identifying both near and longer-term risks and strategic factors in its Risk Management Framework.	√ This relates to delivery and use of a Risk Management Framework under Recommendation 26. ICANN published a DNS Risk Management Framework as well as DNS Risk Assessment and DNS Resilience Model on 28 May 2014. ICANN is now in the DNS Risk Mitigation Phase. Risk Mitigation exercises have been held to communicate the need for collaboration, the approach taken by ICANN and to educate the community on risks and remediation (e.g. an open

			community session was conducted at the ICANN London meeting).
			√ ICANN also has published a Report on Mitigating Risk of Name Collisions, and has been using the Name Collision Risk Management Framework to manage name collision issues.
			√ Periodic review and update of the DNS Risk Management Framework is part of ICANN's SOP.
26 🟢	Operations Excellence – Risk Management and Threat Mitigation	ICANN should prioritize the timely completion of a Risk Management Framework.	√ The DNS Risk Management Framework was approved by the Board in Nov. 2013. √ A DNS Resilience Model was published for community consultation at the ICANN London meeting (see Rec 25). This work is now incorporated into ICANN's Enterprise Risk Management department.
27 🟢	Operations Excellence – Risk Management and Threat Mitigation	ICANN's Risk Management Framework should be comprehensive within the scope of its SSR remit and limited missions	√ The Risk Management Framework and DNS Resilience Model has been incorporated into ICANN's activities in support of its technical mission and the community. The framework can be found here. Several sessions have been held to engage the community to participate in mitigation of the identified risks. ICANN SSR and ERM will continue to collaboratively engage and leverage the Enterprise Risk Model to identify the key asset owners and resources needed to address the risks that have been shared and identified with the community.
28 🔵	Operations Excellence – Risk Management and Threat Mitigation	ICANN should continue to actively engage in threat detection and mitigation, and participate in efforts to distribute threat and incident information.	√ This recommendation supports a continuation of ICANN efforts that are part of SOP, including root zone monitoring, threat detection and mitigation related to ICANN's DNS Operations and to DNS threats and incidents in general. While execution of these activities – and incorporating them in SOP - fulfills this recommendation, staff notes that the work in this area is ongoing. ○ (Phase II) Exploration underway on evolving ICANN activities, including analyzing data streams to identify and mitigate threats. Target date for completion of planning: May 2015. Closure date TBD.