

## Security, Stability & Resiliency of the DNS Review Team (SSR RT) Recommendation 11 Implementation Report

Recommendation 11 of the Security, Stability & Resiliency of the DNS Review Team ([SSR RT](#)) Final Report calls for ICANN to "*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.*" Neither the GNSO (for the new gTLD program) nor the ccNSO (for the IDN ccTLD Fast Track program) has identified SSR-related objectives that apply specifically to those programs. ICANN has, however, defined potentially relevant metrics in the course of pursuing other activities, two of which—the Competition, Consumer Choice, and Consumer Trust Review and the Identifier Technology Health Indicators project—directly engage the objectives of Recommendation 11.

The measures of success anticipated by the SSR RT in Recommendation 11 assume the existence of a community-based definition of “success” with corresponding metrics that could serve as the basis for measurement. These do not exist for the new gTLD program nor the IDN ccTLD Fast Track program. This report recommends that success criteria and measurements that have been developed for closely related ICANN activities—particularly the Competition, Consumer Choice, and Consumer Trust Review Team ([CCCT RT](#))—be considered responsive to Recommendation 11, and that the issue of appropriate SSR metrics specific to the new gTLD program and the IDN ccTLD Fast Track be revisited by the second Security, Stability & Resiliency of the DNS Review Team ([SSR RT2](#)).

To arrive at potential measures of success, this report starts by identifying SSR objectives ([Section 1](#)). It then inventories a broad array of activities within ICANN which various members of ICANN staff flagged as potentially relevant to supporting Recommendation 11 ([Section 2](#)). Finally, this report explores and categorizes a wide range of existing and potential metrics associated with inventoried ICANN activities which may be SSR-related ([Section 3](#)). The objective is to provide useful input to the SSR RT2.

### **1. Background: SSR Objectives for New gTLDs and IDN ccTLD Fast Track**

ICANN’s SSR Framework is an annual plan detailing ICANN priorities for the next fiscal year in promoting a healthy, stable and resilient unique identifier system. Recommendation #11 is based upon ICANN’s [FY12 SSR Framework](#), which identifies IDN fast track and new gTLD implementation as SSR-related administrative responsibilities supported by cross-organizational activities such as vulnerability testing for new gTLDs.

Additionally, Recommendation 11 reflects the [ICANN Strategic Plan – July 2012-June-2015](#), which notes that significant expansion in the number of new TLDs and the potential for abuse of IDN TLDs and their variants presents SSR challenges. However, strategic objectives identified for the SSR Focus Area (below) are not specific to new TLDs:

- Maintain and drive DNS availability
- Promote broad DNSSEC adoption
- Enhance international DNS cooperation
- Enhance risk management and resiliency of the three unique sets of identifiers
- Improve responses to DNS security incidents

Instead, strategic objectives identified for the Competition, Consumer Trust, and Consumer Choice Focus Area specifically address rolling out new TLDs (including IDNs). Associated metrics cited by the SSR RT:

- New gTLDs and IDN fast track: Implementation of measures of success that align with ICANN core values and original program objectives
- Measure effectiveness of Rights Protection Mechanisms in New gTLD Program
- Build, publish and execute a contractual compliance regime for addressing the new expanded TLD space

After reviewing these strategic objectives and metrics, the SSR RT concluded:

*ICANN's administration of the new gTLD program, contract compliance and IDN program management are significant SSR-related issues that should be prioritized in the SSR Framework and implemented with a more detailed set of activities and objectives. ICANN should proceed to develop and implement measures of effectiveness for these administrative issues, seeking Community input, as outlined in the 2012-15 Strategic Plan. It also should incorporate additional substantive information about these important activities into the SSR Framework itself. ICANN should add the SSR Framework (in evolution), metrics, goals, and impact assessment in its management of the new-gTLD program.*

This SSR RT finding was the impetus behind Recommendation 11:

*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.*

## 2. Inventory of Potentially-Relevant ICANN Activities

Because neither the new gTLD program nor the IDN ccTLD Fast Track program has clearly defined SSR-related metrics, ICANN staff believe the SSR RT2 should focus on two particularly relevant ICANN activities:

- the Competition, Consumer Choice, and Consumer Trust Review, for which the Review Team has compiled [Studies, Research, and Background Materials](#) that span many of the topics and issues that concern Security, Stability, and Resilience;<sup>1</sup> and
- the Identifier Technology Health Indicators (ITHI) project of the Research and Analytics team in ICANN’s Office of the CTO.

ICANN staff found many other activities within multiple ICANN departments have the potential to support to-be-defined SSR objectives for the new gTLD and IDN ccTLD Fast Track programs. In the table below, potential relevance is explored for each activity and links are provided to facilitate further consideration. This initial inventory is based on information gleaned from ICANN’s public website, selected ICANN internal documents, and input obtained from ICANN staff responsible for these activities.<sup>2</sup>

ICANN Activity	Potential Relevance to Recommendation #11
<a href="#">New gTLD Program</a>	<b>Potentially-relevant activities include...</b>
<a href="#">DNS Stability Panel (DSP)</a>	This panel evaluates all applied-for new gTLD strings to determine whether the string complies with gTLD Applicant Guidebook and if delegation of the string as a TLD label would raise significant security or stability issues.
<a href="#">String Similarity Evaluation Panel</a>	This panel conducts string similarity review against existing, reserved and all applied-for new gTLD labels, determining whether applied-for strings are so similar that they create a probability of user confusion if delegated into the root zone – a factor that may contribute to phishing.
<a href="#">Legal Rights Objection (LRO)</a>	Businesses, individuals, governmental entities and communities have an opportunity to advance arguments against introducing certain new gTLDs, including this new LRO process to handle cases where the applied-for string allegedly violates the legal rights of the objector.
<a href="#">Public Interest Commitments Dispute Resolution Procedure (PICDRP)</a>	This new post-delegation dispute procedure addresses circumstances in which a community-based new gTLD Registry Operator deviates from restrictions outlined in its Registry Agreement (including those supporting SSR).
<a href="#">Implementation Advisory Group for Competition.</a>	Metrics recommended by this group - including metrics

<sup>1</sup> Because the CCCT review is currently in progress, its Studies, Research, and Background Materials inventory is regularly updated.

<sup>2</sup> Staff providing input: Francisco Arias, John Crain, Kim Davies, Aba Diakite, Elise Gerich, Sarmad Hussain, Jacks Khawaja, Richard Lamb, Karen Lentz, Anna Loup, Margie Milam, Krista Papac, Dave Piscitello, Naela Sarras, Maguy Serad, Russ Weinstein, Christine Willett, and Mike Zupke.

ICANN Activity	Potential Relevance to Recommendation #11
<a href="#">Consumer Trust &amp; Consumer Choice (IAG-CCT)</a>	related to DNS abuse - will be collected by ICANN in preparation for future review relating to new gTLDs.
<a href="#">Global Consumer Survey</a>	This survey is attempting to measuring consumer trust and Internet abuse. If repeated periodically, resulting metrics could conceivably be compared to assess new gTLD impacts.
<b><a href="#">Registry Agreements for new gTLDs</a></b>	<b>Potentially-relevant activities include...</b>
<a href="#">Specification 4: Abuse Mitigation</a>	Section 4.1 of this agreement with all new gTLD Registry operators requires publication of a valid Abuse Contact, which may speed security incident response.
<a href="#">Specification 10: Performance</a>	Section 10.1 of this agreement with all new gTLD Registry operators specifies availability and performance SLAs. Section 10.6 specifies thresholds triggering emergency transition to an EBERO.
<a href="#">Section 11: Public Interest Commitments</a>	Section 11.3(b) of this agreement requires all new gTLD Registry operators to periodically conduct technical analysis to assess whether domains in the TLD are being used to perpetrate security threats.
Registry SLA and Threshold Monitoring	These Section 10 metrics are now monitored by ICANN Technical Services for purposes of compliance enforcement. While these measurements are not published, it might in some cases be possible to compare new and legacy gTLDs.
Registry Threat Assessment Framework	This yet-to-be-published framework of best practices is being developed to assist all gTLD Registry operators in implementing Section 11.3(b) security threat analysis in a manner that creates safe harbor from compliance actions.
<a href="#">Registry Service Evaluation Panel (RSEP)</a>	This panel of experts is tasked with considering proposed Registry Services, including the likelihood and materiality of the proposed service's effects on Security or Stability and risk of a meaningful adverse effect.
<a href="#">Pre-Delegation Testing (PDT)</a>	This testing ensures that a new gTLD applicant has the capacity to operate that TLD in a stable, secure manner, before it can be introduced into the root zone.
<a href="#">Emergency Back-End Registry Operators (EBERO)</a>	To mitigate risks to DNS stability and security in the event that a new gTLD operator fails, an EBERO will be temporarily activated if an operator is at risk of failing to sustain critical registry functions, based upon Emergency Thresholds.
<a href="#">Name Collision Management Framework</a>	Although a study found that addition of new gTLDs does not fundamentally increase DNS name space collisions, this framework specifies measures and metrics implemented by ICANN and new gTLD Registry operators to manage this risk.
<a href="#">Centralized Zone Data Service (CZDS)</a>	This service is the solution for scaling zone data transfer as hundreds of new gTLDs are added to the Internet; it provides a centralized point for interested parties to request Zone Files provided by participating TLDs.
<a href="#">Expedited Registry Security Request (ERSR)</a>	This process allows any gTLD registry to inform ICANN of a security incident and request a contractual waiver for mitigation actions, including malicious activity of scale and severity that threatens SSR of a TLD or the DNS.
<b><a href="#">Registrar Agreements</a></b>	<b>Potentially-relevant activities include...</b>
<a href="#">RDDS (Whois) Section 2.2: SLAs</a>	This section of the RAA, required of Registrars selling new gTLDs, specifies availability and performance SLAs for

ICANN Activity	Potential Relevance to Recommendation #11
	registration data directory services (Whois), often used for purposes related to DNS security and stability.
<a href="#">Privacy/Proxy Registrations Section 2.5: Escrow</a>	This new section of the RAA, required of Registrars selling new gTLDs, mandates escrow deposit of Privacy/Proxy customer contact information to enable ICANN access in the event of RAA termination or cease in Registry operation.
<a href="#">Registrar Data Escrow</a>	This data escrow program remains largely unchanged since 2008; it is arguably less important to security and stability of new gTLDs, which are (with few exceptions) thick Registries.
<b>Contractual Compliance</b>	<b>Potentially-relevant activities include...</b>
<a href="#">Abuse Contact Proactive Monitoring and Enforcement</a>	In 1Q15, compliance proactively monitored Abuse Contact Information published by 64 new gTLDs that started the Claims Period in 1Q15, per Registry Agreement Section 4.1.
Registry Performance Enforcement and <a href="#">Compliance Performance Reports</a>	Using exception reports supplied by Technical Services proactive SLA monitoring efforts, compliance follows-up per process to enforce Registry Agreement Section 10, with results captured in this monthly dashboard.
<a href="#">PIC Proactive Monitoring and Enforcement</a>	In 2014, compliance proactively assessed PICS compliance readiness for 264 new gTLD Registry operators that started or were set to start the General Availability by 1 October 2014, per Registry Agreement Section 11.3(a).
<b>IDN ccTLD Fast Track Process</b>	<b>Potentially-relevant activities include...</b>
IDN ccTLD Fast Track DNS Stability Panel	This panel looks at both stability and string similarity aspects of applied-for IDN ccTLD labels to ensure no impact on stability or end-user confusion.
<a href="#">Extended Process Similarity Review Panel (EPSRP)</a>	If the DNS Stability Panel finds a potential similarity problem with an applied-for IDN ccTLD label, a second extended review is conducted by this panel.
<a href="#">Name collision mitigation recommendation</a>	To avoid post-delegation challenges, a name collision recommendation is shared with all IDN ccTLD applicants after successful string evaluation.
<a href="#">Label Generation Ruleset (LGR) for IDNs</a>	Motivated by security and stability for the root zone, this procedure and tool allows the community to develop LGRs to determine valid TLD labels and their variants for both IDN gTLDs and ccTLDs.
<a href="#">IDN Implementation Guidelines</a>	Provides IDN registration policies and practices designed to minimize the risk of cybersquatting and consumer confusion.
<a href="#">IDN ccTLD Fast Track Process Implementation Plan</a>	This implementation plan includes requirements for TLD string criteria and DNS stability evaluation.
<b>Root Zone Related Activities</b>	<b>Potentially-relevant activities include...</b>
<a href="#">Root Zone Scaling Management</a>	For stability, ICANN limited growth due to new gTLDs to a maximum of 1,000 new delegations per year. This report considers the impact of this allowed growth due to new gTLD delegations on all parts of the Root Server System.
<a href="#">Root Stability Study</a>	This new study will examine the New gTLD Program's impact on the root of the DNS to determine if any additional steps are necessary before adding more TLDs to the root zone, as well as any steps that should be undertaken to assess the state of the root system on an ongoing basis.

ICANN Activity	Potential Relevance to Recommendation #11
<a href="#">IANA Performance Metrics</a>	IANA works to ensure that all changes to the root zone (including IDNs, new gTLDs and preexisting TLDs) are properly authorized and have no negative impact on security and stability. Metrics, published in these monthly performance reports, are not specific to new gTLDs or IDNs.
<a href="#">IANA Function Audits</a>	Two annual audits evaluate IANA's service organization controls (SOCs): SOC 3 Certification of Root Zone KSK System and SOC 2 for IANA Registry Management Systems. These audits are not focused on specific types of TLDs.
<a href="#">DNSSEC Root Key Signing Activities</a>	IANA uses a Root Key Signing Key to sign the root zone, acting as the trust anchor for DNSSEC for the DNS. This web page publishes associated keys and practices; these are not focused on specific types of TLDs.
<a href="#">DNSSEC Deployment Stats</a> and <a href="#">DNSSEC Supporting Registrars</a>	Additional DNSSEC resources include deployment stats and a list of Registrars supporting DNSSEC. While not focused on specific types of TLDs, these resources might potentially be used to derive more specific metrics.
<b>Risk Management Activities</b>	<b>Potentially-relevant activities include...</b>
<a href="#">Enterprise Risk Management Framework</a>	This draft report proposes a risk management framework which sets out ICANN's arrangements for ensuring that robust, reliable risk management occurs through the organization and community. However, this framework does not specifically address new gTLDs or IDN fast track.
<a href="#">DNS Risk Resilience Model</a>	This model presented at ICANN 51 identifies risks to be assessed, including several that could potentially relate to new gTLD and IDN fast track SSR objectives; for example, Root Server system performance, attacks against Root/TLD systems, fraud, IDN gTLD Delegation, and innovation risks.
DNS Risk Definitions and Assessment	Further activities are underway within ICANN ERM and SSR departments to refine initial risk definitions and conduct a DNS Risk Assessment.
<b>Other SSR-Related Reporting Activities</b>	<b>Potentially-relevant activities include...</b>
<a href="#">Global Domains Division (GDD) Performance Report</a>	This public dashboard provides GDD performance metrics, including new gTLD Program pre-delegation testing, RSEP completeness checks and TMCH availability.
<a href="#">Office of the CTO SSR Activities Reporting</a>	These reports describe the Office of the CTO's SSR department's activities to maintain the security, stability, and resiliency of the Internet's global identifier systems, including collaborative, supportive, training and research efforts to mitigate abuse or misuse. These are not specific to new gTLDs or IDNs; more TLDs simply grow the threat landscape.

In addition to the on-going activities summarized above, some members of ICANN staff noted future activities that may contribute to meeting strategic objectives for SSR, such as implementation of RDAP by new gTLD registries and RAA 2013 registrars, adoption of security best practices from industry groups such as the APWG, and expanded DNS abuse training for ccTLDs (including IDN ccTLD registries and registrars). Any success measures developed to address Recommendation 11 should thus evolve over time to leverage new activities.

### 3. Potentially-Relevant Metrics and Data Sources

To address Recommendation 11, ICANN must identify and track measures of success that expressly relate to SSR objectives for the new gTLD and IDN ccTLD Fast Track programs. To support the identification of possible measures by SSR RT2, this Section maps potentially-related activities to ICANN’s SSR role and remit<sup>3</sup>:

- **Security** – The capacity to protect and prevent misuse of Internet unique identifiers.
- **Stability** – The capacity to ensure that the Identifier System operates as expected and that users of unique identifiers have confidence that the system operates as expected.
- **Resiliency** – The capacity of the Identifier System to withstand, tolerate and survive malicious attacks and other disruptive events without disruption or cessation of service.

In addition, we consider the following objective called out specifically by Recommendation 11:

- **Anti-Abuse** – The effectiveness of measures to mitigate domain name abuse.

The table below identifies **supported objectives** and **existing or future metrics** that could potentially be factored into measures of success. Metrics preceded by ■ are linked to existing data sources that could potentially be used to track or derive each metric. Metrics preceded by □ are candidates for future consideration that do not appear to be readily available from existing ICANN data sources. Please refer to [Section 2](#) for additional discussion of each ICANN activity, example metrics, and their possible relevance to specific SSR objectives.

ICANN Activity	Objectives	Possible Existing ■ or Future □ Metrics & Sources
<b><a href="#">New gTLD Program</a></b>		
<a href="#">DNS Stability Panel (DSP)</a>	Security Stability	DSP Review Volume & Outcome stats: <ul style="list-style-type: none"> <li>■ <a href="#">App Status / IE Report / DNS Stability</a></li> <li>■ Strings not approved due to security or stability issues or confusing similarity</li> </ul>
Preventing String Confusion: <a href="#">String Similarity Evaluation Panel</a> String Confusion Objections	Security Stability	String Review Volume & Outcome stats <sup>4</sup> : <ul style="list-style-type: none"> <li>■ <a href="#">List of Contention Sets created by Panel</a></li> <li>■ List of String Confusion Objections Filed</li> <li>■ <a href="#">New gTLD Program Statistics - Contention Sets</a></li> <li>■ <a href="#">Cases in which Objector Prevailed</a></li> </ul>
<a href="#">Legal Rights Objection (LRO)</a>	Security Anti-Abuse	Dispute Volume, Processing, & Outcome stats: <ul style="list-style-type: none"> <li>■ <a href="#">List of LRO Cases</a></li> <li>■ Cases in which Objector Prevailed</li> </ul>

<sup>3</sup> <https://www.icann.org/resources/pages/ssr-role-remit-2015-01-19-en>

<sup>4</sup> Evaluated once for each new gTLD, not repeatedly for the same gTLD

ICANN Activity	Objectives	Possible Existing <input checked="" type="checkbox"/> or Future <input type="checkbox"/> Metrics & Sources
<a href="#">Public Interest Commitments Dispute Resolution Procedure (PICDRP)</a>	Security	PICDRP Volume, Process, & Outcome stats: <input checked="" type="checkbox"/> List of PICDRP Cases (for PICs directly related to SSR Objectives)
<a href="#">Global Consumer Survey</a>	Stability	Consumer Understanding/Experience Ratings for new gTLDs versus legacy gTLDs from <a href="#">Global Consumer Research Study</a> (Phase 1): <sup>5</sup> <input checked="" type="checkbox"/> Trust in TLDs, <input checked="" type="checkbox"/> Reasons Unlikely to Visit <input checked="" type="checkbox"/> Positive Experience Rate
<a href="#">IAG for Competition, Consumer Trust &amp; Consumer Choice (IAG-CCT)</a>	Security Stability Anti-Abuse	New gTLD metrics identified for future evaluation: <input type="checkbox"/> Incidence of Spam, Fraud, Phishing in new gTLDs <input type="checkbox"/> Incidence of Botnets and Malware in new gTLDs <input type="checkbox"/> Number of Duplicate Registrations in new gTLDs <input checked="" type="checkbox"/> Existing “first priority” metrics noted elsewhere
<a href="#">New gTLD Applicant Evaluation Process Module 2<sup>6</sup></a>	Security Stability	New gTLD Applicant Scores for Qs 23, 28, 30, 42, etc: <input checked="" type="checkbox"/> <a href="#">App Status / IE Report / Technical &amp; Operational</a> Capability <input checked="" type="checkbox"/> <a href="#">App Status / IE Report / Financial</a> Capability
<a href="#">New gTLD Program Statistics</a>	Security Stability Resiliency Anti-Abuse	Volume of new gTLD Applications and Delegations: <input checked="" type="checkbox"/> <a href="#">New gTLD Program Statistics, including</a> <input checked="" type="checkbox"/> New gTLD Executed Registry Agreements <input checked="" type="checkbox"/> New gTLDs Passed PDT <input checked="" type="checkbox"/> New gTLDs Delegated to Root Zone <input checked="" type="checkbox"/> Provides context for SSR-related new gTLD stats (i.e., String Similarity, TMCH, PDT Tests)
<b><a href="#">Registry Agreements for new gTLDs</a></b>		
<a href="#">Specification 4: Abuse Mitigation</a> and Abuse Contact Proactive Monitoring	Security Anti-Abuse	Proactively monitored by ICANN Compliance: <input checked="" type="checkbox"/> <a href="#">Abuse Contact Deficiencies</a>
<a href="#">Specification 10: Performance</a> and Registry SLA and Threshold Monitoring	Security Stability Resiliency	<a href="#">SLAs monitored by ICANN Technical Services:</a> <input checked="" type="checkbox"/> DNS Service & Name Server Availability <input checked="" type="checkbox"/> DNS Resolution RTT & Update time <input checked="" type="checkbox"/> RDDS Availability, Query RTT, & Update time <input checked="" type="checkbox"/> EPP Service Availability & Command RTT  Possible future metric: <input type="checkbox"/> Rate of SLA violations across all new gTLDs
<a href="#">Section 11: Public Interest Commitments</a> and PIC Proactive Monitoring and Enforcement	Security Resiliency	Being defined by Registry Threat Assessment FW: <input type="checkbox"/> Count of Security Threats Identified & Mitigated

<sup>5</sup> Evaluated once by current study; study would have to be repeated periodically to enable trend analysis

<sup>6</sup> Note that String Similarity and DSP, also covered in Module 2, have been called out separately in this table



ICANN Activity	Objectives	Possible Existing <input checked="" type="checkbox"/> or Future <input type="checkbox"/> Metrics & Sources
<a href="#">Registry Service Evaluation Panel (RSEP)</a>	Security Stability	RSEP Review Volume & Outcome stats: <ul style="list-style-type: none"> <li>■ <a href="#">App Status / IE Report / Registry Services</a></li> </ul> Operations Performance metrics, including: <ul style="list-style-type: none"> <li>■ <a href="#">RSEP Avg Duration, % within SLT</a></li> </ul>
<a href="#">Pre-Delegation Testing (PDT)</a>	Security Stability	PDT Test Volume, Duration, & Outcome stats: <ul style="list-style-type: none"> <li>■ <a href="#">New gTLD Program Statistics – Passed PDT</a></li> <li>■ <a href="#">App Status / Completed PDT</a></li> <li>■ <a href="#">PDT Cycle Times</a></li> </ul>
<a href="#">Emergency Back-End Registry Operators (EBERO)</a>	Resiliency	<a href="#">Thresholds monitored by ICANN Technical Services:</a> <ul style="list-style-type: none"> <li>■ DNS Service – Resolution of Domain Names</li> <li>■ EPP – Operation of Shared Registration Services</li> <li>■ RDDS – Operation of WHOIS Service</li> <li>■ Data Escrow – Registry data escrow deposits</li> <li>■ DNSSEC Proper Resolution</li> </ul> Possible future metric: <input type="checkbox"/> Rate of EBERO Events across all new gTLDs
<a href="#">Name Collision Management Framework</a>	Stability	Name Collision Monitoring Report Metrics & Targets <ul style="list-style-type: none"> <li>■ <a href="#">Controlled interruption in progress</a></li> <li>■ <a href="#">Controlled interruption completed</a></li> </ul>
<a href="#">Centralized Zone Data Service (CZDS)</a>	Stability	Systems Performance metrics, including: <ul style="list-style-type: none"> <li>■ <a href="#">CZDS Portal Avg Uptime/Downtime, % within SLT</a></li> </ul>
<a href="#">Expedited Registry Security Request (ERSR)</a>	Resiliency	Possible future metrics: <input type="checkbox"/> ERSR Volume and Response Times
<b><a href="#">Registrar Agreements</a></b>		
<a href="#">RDDS (Whois) Section 2.2: SLAs</a>	Security Stability	<a href="#">SLAs monitored by ICANN Technical Services:</a> <ul style="list-style-type: none"> <li>■ RDDS Availability, Query RTT, &amp; Update time</li> </ul> Possible future metric: <input type="checkbox"/> Per-new gTLD Rate of SLA violations
<a href="#">Privacy/Proxy Registrations Section 2.5: Escrow Registrar Data Escrow</a>	Resiliency	<a href="#">Monitored by ICANN Technical Services:</a> <ul style="list-style-type: none"> <li>■ Data escrow deposits for all registered DNs</li> <li>■ Data escrow deposits for Privacy/Proxy customers</li> </ul> Possible future metric: <input type="checkbox"/> Rate of Escrow Compliance across all new gTLDs
<b><a href="#">Contractual Compliance</a></b>		
Registry Enforcement and <a href="#">Compliance Performance Reports</a>	Security Stability Anti-Abuse	In addition to metrics already noted elsewhere. Metrics tracked by ICANN Compliance: <ul style="list-style-type: none"> <li>■ <a href="#">Volume of Ry &amp; RR Breach Notices</a></li> <li>■ <a href="#">Volume of Complaints by TLD Round</a></li> <li>■ <a href="#">Volume of WHOIS Complaints</a></li> </ul>

ICANN Activity	Objectives	Possible Existing <input checked="" type="checkbox"/> or Future <input type="checkbox"/> Metrics & Sources
		<ul style="list-style-type: none"> <li>■ <a href="#">Volume of Abuse Contact Complaints</a></li> </ul> <p>Possible future metrics:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Notice &amp; Complaint Rates across all new gTLDs</li> </ul>
<b>IDN ccTLD Fast Track Process</b>		
<a href="#">IDN ccTLD Fast Track DNS Stability Panel</a>	Stability	<p>IDN ccTLD Review Volume &amp; Outcome stats:</p> <ul style="list-style-type: none"> <li>■ <a href="#">List of IDN ccTLD String Eval Results</a></li> </ul>
<a href="#">Extended Process Similarity Review Panel (EPSRP)</a>	Stability	<p>EPSRP Review Volume &amp; Outcome stats:</p> <ul style="list-style-type: none"> <li>■ <a href="#">List of EPSRP Finding Reports</a></li> </ul>
<a href="#">Label Generation Ruleset (LGR) for IDNs</a>	Security Stability	<p>Possible future metric:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of scripts covered by the LGR<sup>7</sup></li> </ul>
<a href="#">IDN ccTLD Fast Track Process Implementation Plan</a>	Security Stability	<p>Volume of IDN ccTLD Fast Track Requests &amp; Outcomes:</p> <ul style="list-style-type: none"> <li>■ <a href="#">IDN Dashboard</a> or more current resource</li> <li>■ Provides context for SSR-related IDN ccTLD stats (i.e., String Eval Results, ESRP Findings, LGR)</li> </ul>
<b>Root Zone Related Activities</b>		
<a href="#">Root Zone Scaling Management</a>	Stability	<p><a href="#">From Root Zone Data monitored by DNS-OARC:</a></p> <ul style="list-style-type: none"> <li>■ Size of Root Zone</li> <li>■ Number of Delegations</li> <li>■ Root Zone Size per Delegation</li> <li>■ Resource Records per Delegation</li> <li><input type="checkbox"/> Not specific to new gTLDs or IDN ccTLDs but might be compared to <a href="#">Projected Root Zone Growth</a></li> <li><input type="checkbox"/> New metrics from the <a href="#">Root Stability Study</a></li> </ul>
<a href="#">IANA Performance Metrics</a>	Security Stability	<p><a href="#">Published Bi-Weekly by IANA:</a></p> <ul style="list-style-type: none"> <li>■ Root Zone File Change Request Metrics</li> <li>■ gTLD Delegation/Redelegation Metrics</li> <li><input type="checkbox"/> Not specific to new gTLDs or IDN ccTLDs but might be analyzed for possible scalability issues</li> </ul>
<a href="#">IANA Function Audits</a>	Security Stability Resiliency	<p><a href="#">Audit Reports which assess RZ KSK System:</a></p> <ul style="list-style-type: none"> <li>■ Availability</li> <li>■ Processing Integrity</li> <li>■ Security</li> <li><input type="checkbox"/> Not specific to new gTLDs or IDN ccTLDs but SOC 2/SOC 3 audits must continue to be passed</li> </ul>
<a href="#">DNSSEC Root Key Signing Activities</a>	Security	<p><a href="#">IANA-published Practices, Keys, &amp; Key Signing Events:</a></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Not specific to new gTLDs or IDN ccTLDs but DNSSEC activities must continue as planned</li> </ul>

<sup>7</sup> LGR for the root zone is being developed using a conservative procedure which considers security and stability, following RFC 6912 guidelines. The LGR will be evaluated by a very experienced Integration Panel before finalization and then used to determine both valid and variant top-level domain labels, including IDN ccTLD labels. At this time, no existing metrics have been identified to measure LGR effectiveness at achieving SSR goals.

ICANN Activity	Objectives	Possible Existing <input type="checkbox"/> or Future <input type="checkbox"/> Metrics & Sources
<a href="#">DNSSEC Deployment Stats</a> and <a href="#">DNSSEC Supporting Registrars</a>	Security	<p><a href="#">DNSSEC Deployment Report</a>:</p> <ul style="list-style-type: none"> <li>■ % of TLDs signed in root</li> <li>■ % of TLDs signed</li> <li>■ List of TLDs signed in root</li> <li>■ <a href="#">List of Registrars supporting DNSSEC</a></li> </ul> <p>Possible future metrics:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> % of 2<sup>nd</sup> level domains signed within gTLDs</li> <li><input type="checkbox"/> % of Registrars offering new gTLDs that support DNSSEC</li> </ul>
<b>Risk Management Activities</b>		
<a href="#">Enterprise Risk Management Framework</a> and <a href="#">DNS Risk Resilience Model</a> and DNS Risk Definitions and Assessment	Security Resiliency	<p>Being defined by ICANN ERM and SSR departments.<sup>8</sup></p> <p>Possible risks related to SSR which might be assessed to determine impact (if any) of new gTLDs/IDN ccTLDs:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Root Server System Performance Risks</li> <li><input type="checkbox"/> Risk of attacks against Root/TLD Systems</li> <li><input type="checkbox"/> Risk of Fraud</li> <li><input type="checkbox"/> IDN gTLD Delegation Risks</li> <li><input type="checkbox"/> Innovation Risks</li> </ul>
<b>Other SSR-Related Reporting Activities</b>		
<a href="#">Global Domains Division (GDD) Performance Report</a>	Stability	<p><a href="#">ICANN GDD published performance reports</a>, including potentially relevant metrics for the new gTLD Program:</p> <ul style="list-style-type: none"> <li>■ Systems Performance Metrics</li> <li>■ Operations Performance Metrics</li> <li>■ New gTLD Program Performance Metrics</li> </ul> <p>See the new gTLD Program section of this table.</p>

<sup>8</sup> This is ongoing work; it is not yet known if/how these risks can be measured.