

SAC 047

**SSAC Comment on the ICANN gTLD Registry
Transition Processes Model**



A Comment from the ICANN
Security and Stability
Advisory Committee
(SSAC)
15 April 2011

Preface

This is a Comment of the Security and Stability Advisory Committee (SSAC). The SSAC advises the ICANN community and Board on matters relating to the security and integrity of the Internet's naming and address allocation systems. This includes operational matters (e.g., matters pertaining to the correct and reliable operation of the root name system), administrative matters (e.g., matters pertaining to address allocation and Internet number assignment), and registration matters (e.g., matters pertaining to registry and registrar services). SSAC engages in ongoing threat assessment and risk analysis of the Internet naming and address allocation services to assess where the principal threats to stability and security lie, and advises the ICANN community accordingly. The SSAC has no official authority to regulate, enforce or adjudicate. Those functions belong to others, and the advice offered here should be evaluated on its merits.

The contributors to this Comment, reference to the committee members' biographies and statements of interest, and committee members' objections to the findings or recommendations in this report, are at end of this Comment.

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1. Introduction

In conjunction with the anticipated introduction of new generic Top Level Domains (gTLDs) ICANN has published an Explanatory Memorandum to describe a model for the transition of a gTLD from one registry operator to another. The registry transition processes are intended to provide safeguards for registrants in cases where a registry ceases operation or in cases where a registry experiences prolonged technical outages.

This SSAC Comment considers each of the circumstances where the transition processes are to be implemented. In particular, the SSAC considers the objectives, scope and application of the transition processes and recommends that the Explanatory Memorandum clearly identify risks that are mitigated by the proposed transition processes. The Comment asks whether matters such as emergency operator eligibility and regular auditing of emergency operators merit additional consideration. Given the real-time operational implications of a registry transition, the Comment pays particular attention to the security and stability of the Emergency Back-End Registry Operator Temporary Transition Process. Finally, the Comment asks that ICANN consider testing, retention of operational data from ex-registries, zone data escrow, and other information that will facilitate restoration of name resolution service for registrants.

2. Background

As noted above, in conjunction with the anticipated introduction of new gTLDs ICANN has published an Explanatory Memorandum to describe a model for the transition of a gTLD from one registry operator to another. As stated in the memorandum,

“To protect registrants the processes will:

- Ensure registry services are operational to the greatest extent possible and;
- Make sure a new registry operator is evaluated using the appropriate level of scrutiny to maximize the chance of success in the operation of the transitioned gTLD.”¹

The Explanatory Memorandum described the following three processes:²

1. Registry Transition Process with proposed successor to be used primarily when the current registry has identified a successor registry.
2. Registry Transition Process with Request for Proposals to be used primarily when the current registry is terminated and there is no successor registry identified.

¹ “New gTLD Program Explanatory Memorandum: gTLD Registry Transition Processes Model,” <<http://www.icann.org/en/topics/new-gtlds/registry-transition-processes-28may10-en.pdf>>.

² Ibid.

3. Emergency Back-End Registry Operator Temporary Transition Process to be used when one of the Critical Functions (DNS, DNSSEC, Directory Service,³ SRS/EPP, Data Escrow) is performing below a defined emergency threshold and requires temporary replacement.

These processes are intended to ensure that a transition from one registry operator to another occurs in a secure, stable and reliable manner, to minimize the impact on registrants and gTLD users, and to provide transparency to the parties involved in the transition.⁴

The SSAC thanks ICANN for the opportunity to comment on the Explanatory Memorandum.

3. Overview of the Proposed Transition Processes

According to the Proposed Final Applicant Guidebook for new gTLDs, applicants for new gTLDs are required to propose a successor registry operator.⁵ The *Registry Transition Process with Proposed Successor* will be used when a registry requests that ICANN assign its Registry Agreement to a prospective successor (the conditions of assignment are enumerated in [1]).

Certain circumstances may occur during the existence of a gTLD that may require the implementation of a *Registry Transition Process with Request for Proposals*. These include uncured breach, conclusion of a registry agreement with no expressed intent to continue operation, a court ordered cessation of registry services or generally, any circumstance where a (suitable) successor registry is not identified or the continued operation of the registry is questioned. Here, a Request for Proposal is issued to identify and solicit applications from prospective, successor registries.

Other circumstances may require immediate or remedial transition considerations, e.g., a critical registry function is being performed below certain emergency threshold criteria, resulting in a situation of unacceptable risk to domain registrants and gTLD users. In such circumstances, the operation of the gTLD is turned over to pre-selected Emergency Back-End Registry Operators.

The SSAC notes that each of these circumstances merit consideration. The Explanatory Memorandum considers many of the issues associated with successor and

³ The Explanatory Memorandum uses the term “WHOIS” but the SSAC prefers to refer to the service by its more accurate technical term.

⁴ The Explanatory Memorandum further indicates that “Processes 1 and 2 will also be used if at the end of the registry agreement term, or by means of a court order by a legal authority with jurisdiction the relevant Government or Public Authority withdraws its support for the registry of a gTLD representing a geographic name.”

⁵ Proposed Final Applicant Guidebook <<http://www.icann.org/en/topics/new-gtlds/draft-rfp-clean-12nov10-en.pdf>>.

“failure/failover” scenarios. The SSAC offers additional questions and concerns in this Comment.

4. General Questions for Consideration

The SSAC suggests that the Explanatory Memorandum would be improved if it answered the following set of questions.

Question 1: What does it mean to protect the registrant and the gTLD user?

Specifically, the Explanatory Memorandum should identify the risks that are addressed by the proposed transition processes for the following services, along with the proposed mitigation:

- Domain name service (resolution). The SSAC considers this a critical service.
- DNSSEC operations. The SSAC considers this a critical service.
- Registration services (changes to DNS configuration information maintained by the registry). Under certain circumstances, the SSAC also considers this a critical service.
- Registration services (creation and deletion of labels delegated in the gTLD). The SSAC considers that these may be less critical than other services but are important.

Question 2: What is meant by downtime?

Service availability can be measured and checked against thresholds in numerous ways. The SSAC thinks it would be beneficial for all parties – ICANN, registry operators, registrants and gTLD users – to share a common understanding of the definition of “downtime” as it is used in this Explanatory Memorandum. In particular, the Explanatory Memorandum should clarify what constitutes an emergency threshold, and should complement the existing set of technical triggers with business triggers, e.g., compliance criteria, that a registry operator might demonstrate through an audit.

Question 3: Should the registry transition process be mandatory for all gTLDs?

The Explanatory Memorandum appears to suggest that there can be no circumstance in which an approved gTLD can fail or otherwise cease operation without a transition process. The SSAC recommends that ICANN and the community consider the following questions:

1. Do all registries need to be saved? Consider the case where “sole operator, corporate, or community of interest gTLD” proved to be unviable, or the corporate entity enters into bankruptcy. The Explanatory Memorandum considers circumstances where a registry operator is ordered by a court to cease operations. In such circumstances, is it not possible that the court would oppose a transition?

2. What if the decision to transition a gTLD from one registry operator to another proves to be a wrong decision? What can be done to terminate the transition once it has been put in motion?
3. Is there a means to appeal a transition process? Are the conditions for appeal the same or different from appeal criteria in the new gTLD Application Guidebook?
4. What is the process for acting on an emergency when the delay associated with a transition would prove intolerable for the registrants and gTLD users? The SSAC recommends that ICANN and the community explore establishing a process similar to the Registry Services Evaluation Process (RSEP) to appoint a technical lead to oversee a recovery process.
5. The transition processes suggest that the existing operator is excluded once a gTLD is transitioned away. Is this intentional, and if so, are there no (particularly, emergency) circumstances where a gTLD could be restored to an operator (i.e., an emergency registry operator transitions the gTLD *back* to the prior registry operator)?
6. The SSAC notes that current registry agreements have notice and cure periods that are in conflict with the need for emergency services. How do ICANN and the community intend to reconcile this?

5. Policy Considerations

The SSAC thinks that certain aspects of the Registry Transition Process raise the following policy questions:

1. Is there a risk in determining who is eligible to be an emergency operator and who is likely to be selected (pre-approved)? For example, the most qualified may not be interested and the least qualified may not be the best choice.
2. What political issues arise from a registry transition? For example, suppose a gTLD whose application had been opposed by members of the community or certain governments is a candidate for a registry transition? Does the community or government (perhaps through the Governmental Advisory Committee (GAC)) have an opportunity to express its opposition to the transition?
3. Emergency operators are not permitted to accept billable transactions. Should an emergency operator be eligible for exceptions to this policy to act on security incidents, orders from law enforcement, or perhaps actions related to the transition itself?

4. Should there be a regular audit of successor and emergency registry operators to ensure they continue to have available the infrastructure necessary if needed? For example, the audit process might be of two types, (1) scheduled or (2) triggered by some event or formula. Given the conditions wherein the registry transition process could be invoked, both types would serve well here.

These questions ought to be raised in the appropriate policy forums.

6. Comments specific to the Emergency Operator and the Emergency Back-End Registry Operator Temporary Transition Process

Of the three Transition Processes defined, the SSAC suggests that the Emergency Back-End Registry Operator Temporary Transition Process is the most challenging because it is the most time-sensitive and because it is temporary, in the sense that it is either “reversible” (until the existing registry operator fixes its problems) or “transitional” (until a successor registry operator is selected.) Specifically, the Explanatory Memorandum:

- 1) Introduces a new type of entity (the Emergency Operator) with very little specification and very big operational responsibilities. If an entity of this importance is going to be effective, it requires comprehensive definition and that definition would benefit from more discussion.
- 2) Arrives at the conclusion that there will be two Emergency Operators and that one will be Primary and another Secondary without providing a rationale for this architecture.
- 3) Does not discuss registrar, registrant, Internet Service Provider (ISP) considerations as they relate to interacting with the Emergency Operators.

The SSAC’s primary concerns with respect to the registry transition process relate to operational readiness, criteria for execution, process steps, rainy-day scenarios, and other related issues (see below). While the other two processes (1 and 2 on page 5 above) are important to the community, SSAC expects that these will occur along a timeline that is long and that security and stability concerns would be largely mitigated by common sense. In comparison, the Emergency Back-End Registry Operator Temporary Transition Process is likely to exhibit more “real-time” characteristics.

7. Other Issues

The SSAC notes that certain registry operators provide registry services for multiple TLD registries and recommends that the Explanatory Memorandum distinguish registry failures from registry operator failures. The latter could affect multiple registries and recovery would be different.

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The SSAC recommends that ICANN define a testing process that emulates a full failover scenario and that successor and emergency registry operators demonstrate their ability to satisfy the testing criteria.

The SSAC recommends that ICANN preserve operational data about ex-registries. ICANN should define a framework to share such data with the community. Availability of such data will ensure that the registration transition process can be studied and if needed, improved.

The SSAC emphasizes that in many if not most circumstances, restoring domain name system (DNS) resolution services will be the number one priority for registrants and gTLD users. This requires DNS zone files for gTLDs to be escrowed separately.

The SSAC notes that the Explanatory Memorandum makes no provision to ensure that a registrant retains the registration of a domain name during transition. The process must have a provision to lock domain ownership during a transition.

The SSAC notes that in certain operating circumstances, registry functions, especially critical services such as DNS resolution and DNS security (DNSSEC), may be separable from other functions (registry database maintenance). The SSAC asks whether in such circumstances critical functions can be transitioned separately.

With respect to registration fees, the SSAC also notes that certain registrant information is not associated with or collected for the purpose of the public directory service,⁶ but is instead part of the administrative data that might be split between the registry and the registrar. If the registry is replaced, one of two conditions might exist:

- 1) The current registry operator has information on the payment cycle. In this case, the current registry operator must provide the billing and payment cycle to the successor registry along with each registrant's registration information.
- 2) The registrar has payment information. In this case, the current registry operator must provide the sponsoring registrar information for each domain that is registered to the successor registry.

Lastly, the SSAC makes the following recommendations regarding the construction of the Explanatory Memorandum:

- 1) It should be footnoted with references to the AG.
- 2) It should reference and use defined terms from the Applicant Guidebook rather than crafting its own definitions.

⁶ The Explanatory Memorandum uses the term "WHOIS" but the SSAC prefers to refer to the service by its more accurate technical term.

- 3) It imposes requirements on various parties, but it is unclear if these have the stature of requirements stated in the Applicant Guidebook. Since its function is to be explanatory, the text should truly be explanatory as opposed to normative.

8. Acknowledgments, Statements of Interests, and Objections, and Withdrawals

In the interest of greater transparency, these sections provide the reader information on three aspects of our process. The Acknowledgments section lists the members who contributed to this particular document. The Statements of Interest section points to the biographies of the Committee members and any conflicts of interest, real, apparent or potential, that may bear on the material in this document. The Objections and Withdrawals section provides a place for individual members to disagree with the content of this document or the process for preparing it.

8.1 Acknowledgments

The committee wishes to thank the following SSAC members for their time, contributions, and review in producing this Report.

Jeff Bedser
Steve Crocker
Patrik Fältström
Jim Galvin
Ram Mohan
Dave Piscitello
Richard Wilhelm

8.2 Statements of Interest

SSAC member biographical information and Statements of Interest are available at: <http://www.icann.org/en/committees/security/biographies-25mar11-en.htm>.

8.3 Objections and Withdrawals

There were no objections or withdrawals.