

## Registries Stakeholder Group Statement

Issue: Continuous Data-Driven Analysis of Root Server System Stability

**Date statement submitted: 13 January 2017**

**Reference URL:** <https://www.icann.org/public-comments/cdar-draft-2016-10-27-en>

### **Background:**

What? :

An assessment of the technical impact of the new gTLD Program on the security and stability of the root DNS system.

Research questions:

- *Did the delegation of new gTLDs degrade the stability or security of the root DNS system?*
- *Can we expect that the delegation of more new gTLDs will degrade the stability or security of the root DNS system in the future?*

Conclusion:

The researchers did not observe a degradation of the stability or security of the root DNS system as a result of the delegation of new gTLDs, and see no signs that the delegation of more new gTLDs in itself will degrade the stability or security of the root DNS system in the near future.

Recommendations:

- New gTLD program to retain a gradual rate of delegating new gTLDs.
- More continuous monitoring of risk parameters is recommended, including automation and an upgrade of the continuous data collection.

### **RySG Comment:**

The RySG is pleased that the root DNS system has been able to handle the increase in root server traffic observed between January 2014 and January 2016, which was approximately threefold. Considering that only 0.4% of the queries received by the root servers are for new gTLDs, we infer that there is no strong correlation between increase of the root zone size and root servers query load. In fact, making the root zone larger could have contributed to limit the growth of overall traffic to the root servers because of differences in behavior between positive and negative caching. First, positive answers have a larger TTL (Time To Live) than answers of non-existence, and second, as demonstrated in previous analysis of queries to recursive servers versus root servers, negative caching is applicable only to specific host names whereas positive caching applies to an entire TLD.

The RySG is of the opinion that the cautious approach of gradually delegating new gTLDs was the right choice and advises also in future rounds to exercise care and keep the DNS evolving in a healthy way. As experience with the root server system grows, the increased root server system monitoring capabilities should be used as guidance to whether a ceiling is in effect required and what that ceiling should be.

The RySG strongly agrees that “monitoring of risk parameters” and “data collection” should continue and that improvements should be made in how that is done provided the improvements are tested before being implemented.

The RySG notes that the warning for potential stability risks evoked by the removal of new gTLDs is not based on data in the report. The text should better indicate that potential security risks are to be considered on a TLD by TLD basis, in case of retirement of a new as well as of a legacy TLD.