Statement of Work and Scope:
Expectations of the Root Server System and related Metrics

Background
RSSAC037 and RSSAC038 define a framework for the evolution of the DNS Root Server System (RSS). The implementation of the final framework would address future governance as well as enable technical evolution of the RSS through the proposed framework, specifically the Strategy, Architecture and Policy Function.

Regardless of how RSSAC037 and RSSAC038 are implemented, there is work that can and should be done now. The finalization of this technical work should plug right into any implementation of RSSAC037. The RSSAC with the operational experience of its membership as well as the added expertise of the RSSAC Caucus is best suited to take on this work.

Scope
The document will:
- Define system-wide, externally verifiable metrics which demonstrate that the RSS as a whole is online, serving correct and timely responses to end users.
- Define measurements to ensure Root Server Operators (RSOs) are meeting a minimum level of performance. These measurements would include technical metrics and thresholds designed to assess the performance, availability, and quality of service that each RSO provides. In addition, these measurements should be included as the RSSAC's input to a yet-to-be defined evaluation process for future RSOs.
- Refine the Bandwidth, Packets per second, and Queries per second (BPQ) measurement methodology first proposed in RSSAC037.
- Depending on the result of this work, it is foreseen that RSSAC001 may be either updated or obsoleted by the outcome of this effort. The work party should also be open to updating or replacing the companion document RFC 7720 through the appropriate IETF processes.

Deliverables
A *final draft* of the document titled "RSSAC001v2". Optionally, a revision of RSSAC002 may also be produced to document relevant measurements. Additionally, an update to RFC7720 may need to be tracked through appropriate IETF processes.

Date of Delivery:
The work party should submit a first draft to the RSSAC prior to the RSSAC Workshop in April 2019.

The work party should submit the final draft to the RSSAC no later than 1 August 2019. Submission prior to the deadline is welcome.

Guidelines
The RSSAC requests that this work party adhere to RSSAC operational procedures in its work. The work party should choose a work party leader. The work party leader will report progress on

this work to RSSAC as appropriate. In the event that the deadline will not be realized, the work party leader should inform RSSAC immediately and provide details of the work that cannot be completed by the deadline.

RSSAC support staff will assist the work party deliberation of the work, including setting up a mailing list for the work party, arranging and supporting regular teleconference calls, taking notes of meetings, and drafting background materials, as needed.

Prior Relevant Work
In RSSAC001, the RSSAC describes the best practice service provided by root servers and defines the expectations that users might reasonably expect of both that service and the Root Server Operators. This is available at:
https://www.icann.org/en/system/files/files/rssac-001-root-service-expectations-04dec15-en.pdf

In RSSAC024, the RSSAC defines key technical elements of potential root operators that would be a critical part of any potential root server operator designation process. This is available at:
https://www.icann.org/en/system/files/files/rssac-024-04nov16-en.pdf

In RFC 7720, the IETF defines DNS Root Name Service Protocol and Deployment Requirements. These are available at:
https://tools.ietf.org/html/rfc7720

In RSSAC002v3, the RSSAC defines measurements that RSOs are expected to collect and report. This is available at:
https://www.icann.org/en/system/files/files/rssac-002-measurements-root-06jun16-en.pdf