Project Overview for the Technical Compliance Monitoring System

Request for Proposal

10 April 2019

1 Introduction

1.1 About this Document

This document provides an overview of the Request for Proposal (RFP). It provides background and pertinent information regarding the requirements. The RFP itself is comprised of this as well as other documents that are hosted in the ICANN sourcing tool (i.e. SciQuest). Indications of interest are to be received by emailing TechnicalComplianceMonitoring-RFP@icann.org. Proposals should be electronically submitted by 23:59 UTC on 14 May 2019 using ICANN's sourcing tool, access to which may be requested via the same email address as above.

1.2 Overview of the Internet Corporation for Assigned Names and Numbers (ICANN)

The Internet Corporation for Assigned Names and Numbers' (ICANN) mission is to ensure the stable and secure operation of the Internet's unique identifier systems. To reach another person on the Internet, you have to type an address into your computer - a name or a number. That address has to be unique so computers know where to find each other. ICANN helps coordinate and support these unique identifiers across the world.

ICANN promotes competition and develops policy on the Internet's unique identifiers. ICANN has introduced over 1200 new generic top-level domains (gTLDs), each of which is operated by a Registry. In addition, as a function of ICANN's responsibility, it accredits domain name Registrars, who facilitate the registration of Internet domain names for individuals and organizations (i.e. Registrants). Currently, there are approximately 3,000 ICANN-accredited Registrars.

See www.icann.org for more information.

2 Scope

2.1 Project Objective

The Internet Corporation for Assigned Names and Numbers ("ICANN") is soliciting proposals to identify a provider to develop and maintain a Technical Compliance Monitoring system. The Technical Compliance Monitoring system is intended to be a system that continuously monitors gTLD Registries and Registrars (the "Contracted Parties") compliance with ICANN's Consensus Policies, and the provisions described in the 2017 gTLD Base Registry Agreement and the 2013 Registrar Accreditation Agreement (the "Contracted Parties Agreements"), respectively.

The principal objective of the system is to automate as much as possible the monitoring of compliance with the provisions in the Contracted Parties Agreements. The system is intended to

pull information from internal and external data sources, check compliance with relevant provision(s), and push results to a central repository.

ICANN seeks a provider to develop this system based on provided requirements and provide a three-year commitment to develop enhancements.

This system will allow ICANN to operate more efficiently and engage parties in a consistent, transparent manner for issues related to compliance with the **Contracted Parties Agreements**.

Given ICANN's unique and essential role among the global community of Internet stakeholders, and the role of the Technical Compliance Monitoring contractor in facilitating this mission, mitigating perceived or actual conflicts of interest will be an essential part of the evaluation of potential vendors. As part of this Request for Proposal (RFP), ICANN has determined that certain existing relationships with ICANN including certain arrangements such as having a gTLD Registry Agreement or a Registrar Accreditation Agreement may result in elimination from consideration in the RFP.

When delivering a submission to ICANN, responders will be asked to identify all existing relationships between them and their affiliates with the ICANN Organization, its officers, directors, and employees. Responders will also be asked to acknowledge that they are aware that ICANN has implemented policies and procedures to identify and, as necessary, mitigate any potential or actual conflicts of interest between them and the ICANN Organization, its officers, directors, and employees and the objectives embodied in ICANN's mission and purpose.

If selected as a vendor, the contractor will be required to represent and acknowledge that they are subject to ICANN's conflict of interest policies and procedures insofar as necessary to maintain and safeguard the integrity of ICANN's mission and responsibilities to the global community of internet stakeholders. Accordingly, the Technical Services Compliance Monitoring contractor will be required to complete and deliver annually a “Contractor Conflicts of Interest Disclosure”. In addition, the Technical Services Compliance Monitoring contractor will be required to agree that it will revise and update the Contractor Conflicts of Interest Disclosure when and to the extent to which it becomes aware of circumstances that would require such a revision, and in all events at least annually. To the extent that conflicts of interest are identified that to do not embody ICANN's mission and purpose, ICANN may, in its sole discretion, terminate the Technical Services Compliance Monitoring contractor's agreement in accordance with its terms.

2.2 Background

ICANN’s ability to continuously monitor compliance of its **Contracted Parties** is in line with ICANN’s objective to support a healthy, stable, and resilient unique identifier ecosystem. ICANN is also acting consistently with the ICANN's Bylaws, as set out in Article I, section 1.1, that, "ICANN shall have the ability to negotiate, enter into and enforce agreements, including public interest commitments, with any party in service of its Mission." (ICANN Bylaws at https://www.icann.org/resources/pages/governance/bylaws-en#I.)

As the industry continues to grow and the ICANN Organization matures, ICANN looks to leverage technology to gain efficiencies in its processes. Internet users, Registrants, Registrars,

Registries and ICANN Organization will benefit from an efficient method of monitoring compliance with the provisions in the **Contracted Parties Agreements**. Details regarding the current ICANN Contractual Compliance programs can be found at https://www.icann.org/resources/compliance-programs.

More information about Domain Names, and how the **Contracted Parties** fit in the industry can be found here: https://www.icann.org/en/about/learning/beginners-guides/domain-names-beginners-guide-06dec10-en

The gTLD Base Registry Agreement can be found here:
https://www.icann.org/resources/pages/registries/registries-agreements-en

Note: Specification 10 of the gTLD Base Registry Agreement is out-of-scope in this project.

The 2013 Registrar Accreditation Agreement can be found here:
https://www.icann.org/resources/pages/registries/registries-agreements-en

NOTE: SECTION 2 OF THE REGISTRATION DATA DIRECTORY SERVICE (WHOIS) SPECIFICATION OF THE 2013 REGISTRAR ACCREDITATION AGREEMENT IS OUT-OF-SCOPE IN THIS PROJECT.

Related Statistics as of 31 July 2017		
Domains 196m Total (Legacy + New gTLD) 168m Legacy gTLD Domains 27m New gTLD Domains	**Registries** 1239 Total (Legacy + New gTLD) 618: North America 387: Europe 211: Asia/Australia/Pacific 17: Latin America/Caribbean islands 6: Africa	**Registrars** 2,952 Total Registrars 2516: North America 166: Europe 244: Asia/Australia/Pacific 16: Latin America/Caribbean islands 10: Africa

2.3 Scope of Work

The services requested in this RFP is for development and maintenance of the Technical Compliance Monitoring system.

The work is expected to be provided in two main areas:

1. Development of a software solution that complies with ICANN requirements.

2. Commitment of 120 hours of development annually for three years and one release every six months after the first release of the system.

NOTE: QUALITY ASSURANCE, CONFIGURATION MANAGEMENT, PROJECT MANAGEMENT HOURS ARE NOT CONSIDERED PART OF THE 120 HOURS OF DEVELOPMENT.

The main tasks for Development are:

1. Monitoring subsystem:

   - The monitoring subsystem shall push alerts to the **technical compliance API**. The **technical compliance API** is a Representational State Transfer (REST) API provided by ICANN that receives and persist alerts from the monitoring subsystem.
   - Tests may require the use of probe nodes on different networks maintained by ICANN, therefore the monitoring subsystem shall support executing portions of the test in a distributed design.
   - Automation of the tests described in section 5.0
   - This component shall be dockerized.

2. Reporting interface:

   - A reporting interface shall be provided to ICANN. The reporting interface shall support SQL-like commands.
   - Response times ranging from sub-second to a couple of minutes are expected.
   - This component shall be dockerized.

3 High Level Selection Criteria

The decision to select a provider as an outcome of this RFP will be based on, but not limited to, the following selection criteria:

1. Capability and experience, including qualifications and availability of key personnel
2. Proposed implementation approach
3. Responsiveness and flexibility to work with ICANN specific requirements, agreement terms, etc.
4. Quality and process excellence
5. Value added services
6. Financial value / pricing
7. Reference checks
8. Mitigation of any conflicts of interest

4 Business Requirements

Provider must be able to develop a system (**Technical Compliance Monitoring system**) that implements the Business Requirements described in the Business and Software Technical Requirements for the Technical Compliance Monitoring System specification [to be provided based on intent to submit RFP].

A summary of the requirements is as follows:

1. Provider must be able to develop a system (Technical Compliance Monitoring system) that implements the functionality described in the Technical Compliance Control Points specification [to be provided based on intent to submit RFP].

2. Ability to provide completed responses to questionnaire by the designated due date via the SciQuest tool [to be provided based on intent to submit RFP].

3. Provider must be able to develop a system (Technical Compliance Monitoring system) capable of meeting the technical requirements outlined in section 5.0 below

4. Ability to complete development of the Technical Compliance Monitoring system per the timeline described in section 6.0 below, with weekly status updates via phone/email/meeting, as appropriate. Provider must be able to accommodate weekly status meetings with key personnel during business hours in US Pacific Time Zones.

5. Provider must be able to make available the source code format to ICANN. The software developed under the contract may be published by ICANN as Open Source Software.

6. The software is to be fully and solely owned by ICANN.

7. All libraries used in the solution must be licensed as Open Source Software unless otherwise agreed by ICANN.

8. Availability to execute a professional services agreement substantially in accordance with the terms and conditions of ICANN's Contractor Consulting Agreement [to be provided based on intent to submit RFP].

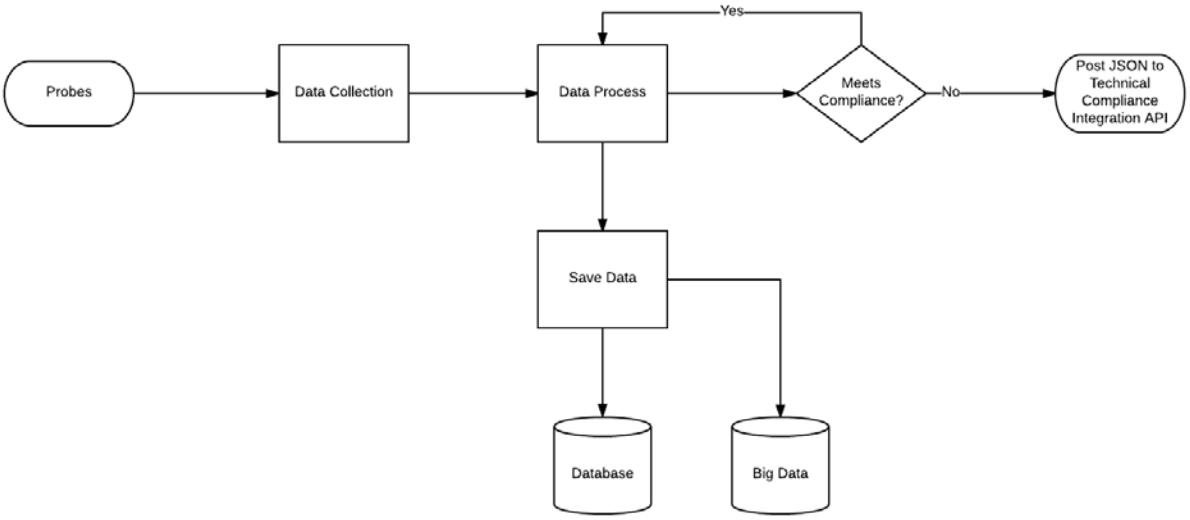
9. Must be able to demonstrate to ICANN satisfaction that there are no material conflicts of interest.

10. Provider must have ability to communicate (verbally and in writing) in English

5 Software Technical Requirements

Provider must be able to develop a system (**Technical Compliance Monitoring system**) that implements the Software Technical Requirements described in the Business and Software Technical Requirements for the Technical Compliance Monitoring System specification [to be provided based on intent to submit RFP].

A high-level architecture of the system is as follows:



A summary of the requirements is as follows:

- The software must be developed in JAVA 11. DNS probe portion can be developed in Python 3 with prior approval.
- The system must run in CentOS 7.
- The main Relational Database Management System (RDBMS) to be used in the system is MariaDB.
    - Must be ready to migrate to Amazon RDS.
- If an application server is used, it must be Apache Tomcat 8.5 or above.
- The provider must follow the Google Java Style Guide, see https://google.github.io/styleguide/javaguide.html
- The TestNG framework must be used for the implementation of unit test cases.
- The provider must use the Spring Boot framework.
- Apache Maven must be used by the provider.
- Must be Jenkins ready for continuous development
- Must be able to setup and compile in Intellij
- Software must be Dockerized
- Code must be properly documented, see http://www.oracle.com/technetwork/articles/java/index-137868.html
- Must be implemented in micro services architecture when necessary
- Must create and provide sequential, component, architectural, etc. diagrams of system
- Must be objected oriented designed and developed
- System must be multi-threaded
- Code should be cloud ready (externalize configuration, not dependent on local file system, stateless as possible, can easily scale horizontally)
- Expose service monitoring end point using Spring Boot Actuator
- Must follow the 12 Factor App best practices, see https://12factor.net
- Build and deploy should be automated including any configuration (application configuration, secrets, schema, upgrades)
- Must be AWS ready from the start
- Security testing by a reputable company must be performed, and the results shall be provided to ICANN.
- All communication channels must use TLS (e.g. https).

- All RESTful APIs must be fully documented, and Swagger definition files provided to ICANN Cybersecurity.
- Code must pass Cybersecurity static code analysis prior to release
- Code must pass Cybersecurity Netsparker analysis prior to release
- The solution must scale horizontal from the perspective that the atomic testing unit from the business perspective is a registry or registrar, and no dependencies exist between the registry or registrar.
- All test cases shall be automated in Selenium. If possible, the provider should use BQurious.
- Unit test cases shall be implemented.
- Load testing shall be executed, and results shall be provided.
- Stress testing shall be executed, and results shall be provided.
- Code must be reviewed and passed by SonarCube analysis with 90% code coverage

6 Project Timeline

The following dates have been established as milestones for this RFP. ICANN reserves the right to modify or change this timeline at any time as necessary.

Activity	Estimated Dates
RFP reopened	**10 April 2019**
Participants to indicate interest in submitting RFP proposal	**19 April 2019 by 23:59 UTC**
Participants submit any questions to ICANN	**24 April 2019 by 23:59 UTC**
ICANN responds to participant questions	1 May 2019
Participant proposals due by	14 May 2019 by 23:59 UTC
Evaluation of responses	May to June 2019
Vendor contracting and award	July 2019

7 Terms and Conditions

General Terms and Conditions

1. Submission of a proposal shall constitute Respondent's acknowledgment and acceptance of all the specifications, requirements and terms and conditions in this RFP.

2. All costs of preparing and submitting its proposal, responding to or providing any other assistance to ICANN in connection with this RFP will be borne by the Respondent.

3. All submitted proposals including any supporting materials or documentation will become the property of ICANN. If Respondent's proposal contains any proprietary information that should not be disclosed or used by ICANN other than for the purposes of evaluating the proposal, that information should be marked with appropriate confidentiality markings.

Discrepancies, Omissions and Additional Information

1. Respondent is responsible for examining this RFP and all addenda. Failure to do so will be at the sole risk of Respondent. Should Respondent find discrepancies, omissions, unclear or ambiguous intent or meaning, or should any question arise concerning this RFP, Respondent must notify ICANN of such findings immediately in writing via e-mail no later than ten (10) days prior to the deadline for bid submissions. Should such matters remain unresolved by ICANN, in writing, prior to Respondent's preparation of its proposal, such matters must be addressed in Respondent's proposal.

2. ICANN is not responsible for oral statements made by its employees, agents, or representatives concerning this RFP. If Respondent requires additional information, Respondent must request that the issuer of this RFP furnish such information in writing.

3. A Respondent's proposal is presumed to represent its best efforts to respond to the RFP. Any significant inconsistency, if unexplained, raises a fundamental issue of the Respondent's understanding of the nature and scope of the work required and of its ability to perform the contract as proposed and may be cause for rejection of the proposal. The burden of proof as to cost credibility rests with the Respondent.

4. If necessary, supplemental information to this RFP will be provided to all prospective Respondents receiving this RFP. All supplemental information issued by ICANN will form part of this RFP. ICANN is not responsible for any failure by prospective Respondents to receive supplemental information.

Assessment and Award

1. ICANN reserves the right, without penalty and at its discretion, to accept or reject any proposal, withdraw this RFP, make no award, to waive or permit the correction of any informality or irregularity and to disregard any non-conforming or conditional proposal.

2. ICANN may request a Respondent to provide further information or documentation to support Respondent's proposal and its ability to provide the products and/or services contemplated by this RFP.

3. ICANN is not obliged to accept the lowest priced proposal. Price is only one of the determining factors for the successful award.

4. ICANN will assess proposals based on compliant responses to the requirements set out in this RFP, responses to questions related to those requirements, any further issued clarifications (if any) and consideration of any other issues or evidence relevant to the Respondent's ability to successfully provide and implement the products and/or services contemplated by this RFP and in the best interests of ICANN.

5. ICANN reserves the right to enter into contractual negotiations and if necessary, modify any terms and conditions of a final contract with the Respondent whose proposal offers the best value to ICANN.