

Registration Directory Service (RDS)-WHOIS2 Review

Final Report

RDS-WHOIS2 Review Team
3 September 2019



1 Executive Summary

1.1 Overview

1.1.1 Introduction

This is the Final Report of the RDS-WHOIS2 Review in accordance with ICANN Bylaws Section 4.6(e).

1.1.2 Subject Background

The Internet Corporation for Assigned Names and Numbers (ICANN) is responsible for, among other things, the establishment of policies related to the creation and use of Generic Top-Level Domains (gTLDs). Within each Top-Level Domain (TLD) individuals and organizations may register domain names. For each registration a record is maintained of information about that registration including who the registrant is and their contact information.

This registration record is traditionally referred to as a “WHOIS” record and more recently is referred to as a Registration Directory Service (RDS) record. When ICANN was created, it was established that information in the RDS (WHOIS) database be public, but privacy demands soon led to informal privacy/proxy mechanisms to meet privacy wishes. It also led to letters from European data protection commissioners, indicating that the public directory violated data protection laws.

The ICANN Board establishes policy associated with gTLD RDS (WHOIS) on the recommendation of the Generic Names Supporting org (GNSO). Current RDS (WHOIS) policy is a combination of enacted policy, contractual obligations placed on Registrars and Registries, and de facto policy left over from the Internet’s early days. A more thorough and exhaustive WHOIS history can be found in a variety of places on ICANN’s website, including [here](#) and [here](#).

As part of its prior agreement with the United States Department of Commerce, and more recently under its own Bylaws, ICANN is required to periodically review the RDS (WHOIS) system. The first such review was carried out between 2010 and 2012, and the present review is the second such effort.

The development of a cohesive, single RDS (WHOIS) policy that meets the needs of multiple stakeholder groups has been a topic of discussion and debate in ICANN for over 15 years. The recommendations of the first WHOIS review team (hereafter referred to as the WHOIS1 Review Team) resulted in an Expert Working Group (EWG) studying WHOIS and the creation of a GNSO Policy Development Process (PDP) to establish a new RDS Policy Framework to replace WHOIS (referred to as the Next-Generation gTLD RDS). In mid-2017, ICANN began efforts to address European Union privacy regulations - the General Data Protection Regulation (GDPR). GDPR impacts ICANN and its registrars’ and registries’ current RDS (WHOIS) regime and the ability to continue to publish RDS (WHOIS) information - specifically personal data from, or processed in, the European Union and neighboring countries in the European Economic Area. While the former data protection regime under the Data Protection Directive 95/46 also had been shown to preclude publication of personal information in the WHOIS, the new regulation brought much stronger enforcement provisions.

1.1.3 Review Scope

There were a number of community proposals to both limit the scope of this RDS-WHOIS2 Review to only assess the WHOIS1 Review Team's recommendations, and also proposals to include a range of other issues over and above those mandated in the Bylaws.

Formally, the scope of a Review is the responsibility of the review team. The RDS-WHOIS2 Review Team discussed and decided that it would review all of the Bylaw mandated areas, except that referring to the OECD Guidelines, as they were under consideration by the Next-Generation gTLD RDS PDP and were judged to be less relevant, particularly in relation to the GDPR. Additionally, the RDS-WHOIS2 Review Team included a review of new policy adopted by ICANN since the WHOIS1 Review Team published its report. It also decided to perform a substantive review of Contractual Compliance with the intent of (a) assessing the effectiveness and transparency of ICANN enforcement of existing policy relating to RDS (WHOIS) through ICANN Contractual Compliance actions, structure and processes, including consistency of enforcement actions and availability of related data, (b) identifying high-priority procedural or data gaps (if any), and (c) recommending specific measurable steps (if any) the team believes are important to fill gaps.

The RDS-WHOIS2 Review Team explicitly did not focus on ICANN's actions in response to the relatively new European Union GDPR. Those actions are ongoing and the outcomes are not sufficiently finalized as to allow them to be reviewed here. However, the review team recognized the issue is of significant importance and that it would probably impact several policies related to registrant data. To the extent GDPR and its effects on the RDS (WHOIS) could be factored in, the RDS-WHOIS2 Review Team did so.

1.1.4 Methodology

Mandated by ICANN's Bylaws, Specific Review teams may include up to twenty-one members representing the seven Supporting Organizations (SO) and Advisory Committees (AC). The RDS-WHOIS2 Review Team has ten members representing the At-Large Advisory Committee (ALAC), the Governmental Advisory Committee (GAC) and the Generic Names Supporting Organization (GNSO), plus one member representing the ICANN Board. The other SO/ACs declined to participate in this review. All meetings (both teleconferences and face-to-face) allowed observers and all review team documents and mailing lists are publicly viewable.

The 16 recommendations from the WHOIS1 Review Team were grouped into nine subject areas: Strategic Priority, Single WHOIS Policy, Outreach, Contractual Compliance, Data Accuracy, Privacy/Proxy, Common RDS (WHOIS) Interface, Internationalized Registration Data,¹ and Implementation Planning/Reports. A subgroup of the RDS-WHOIS2 Review Team was formed to address each topic. Subgroups were created to address topics beyond recommendations produced by the WHOIS1 Review Team (Law Enforcement, Consumer Trust, Safeguards and Post-WHOIS1 Policies and Procedures, referred to as "Anything New"). The new topic on Contractual Compliance Actions, Structure, and Processes was handled by the subgroup reviewing the original WHOIS1 Compliance recommendations.

Each subgroup performed an analysis of its subject matter, and drafted its report including any new recommendations. Many subgroups held teleconferences to carry out their work, in

¹ The WHOIS1-Final Report incorrectly titles the section on Internationalized Registration Data as "Internationalized Domain Names". As the report itself makes clear, the problem is not with the domain names which are handled by the DNS and WHOIS by translating them into ASCII (Punycode), but in the registration data such as the registrant name or mailing address. WHOIS only allows 7-bit ASCII for those, and the need to be able to enter such data in local scripts exists for non-IDN domains as well.

addition to e-mail discussions. The subgroup's documents and its conclusions were then reviewed in depth by the entire review team. If possible, decisions were made by consensus and ultimately all recommendations acquired full consensus.

The RDS-WHOIS2 Review Team conducted 49 ~90-minute teleconferences and met face-to-face four times for a total of 10 days prior to issuing this Report.

1.1.5 Summary Findings

This section provides a brief description of the issues and findings for each subject area. Full text of all resultant recommendations appears in the section that follows.

Strategic Priority: WHOIS1 Recommendation #1 required ICANN to treat RDS (WHOIS) as a strategic priority. This recommendation was deemed to have been partially implemented as it failed to achieve the original aim of instilling a culture of proactive monitoring and planned improvement in RDS (WHOIS).

Single WHOIS Policy: WHOIS1 Recommendation #2 required ICANN to create a single RDS (WHOIS) policy document. This was done by creating a web-based document, linking to the various documents that, in total, comprise ICANN RDS (WHOIS) policy. Although this was not a single policy that was envisioned by some on the WHOIS1 Review Team, it did address the recommendation and was deemed to be fully implemented.

Outreach: WHOIS1 Recommendation #3 required ICANN to perform outreach, including to communities outside of ICANN, to improve understanding of RDS (WHOIS) and promote consumer awareness. Significant web-based documentation was created, but it was not well integrated with other registration and RDS (WHOIS)-related parts of the ICANN website. Abundant outreach was done, but little to communities not normally involved with ICANN. The recommendation was therefore deemed to be partially implemented.

Contractual Compliance: WHOIS1 Recommendation #4 required that the ICANN Contractual Compliance function be managed in accordance with best practice principles and overseen by a dedicated senior executive. There has been significant improvement since the recommendation was made, but it was found to be only partially implemented.

In addition to reviewing the implementation of WHOIS1 Recommendation #4, this subgroup was also responsible for the additional study of Contractual Compliance Actions, Structure, and Processes as described under [Section 1.1.3 Review Scope](#). A number of issues were identified, resulting in several new recommendations.

Data Accuracy: WHOIS1 Recommendations #5-9 dealt with several issues related to RDS (WHOIS) accuracy. The implementation of these recommendations resulted in a significant effort on behalf of ICANN organization and there is now a better understanding of the issue. However, there are still many gaps in our understanding of accuracy issues. Although the syntactic accuracy of data has improved, it is less clear what the impact has been on whether the data allows identification of and contact with registrants. GDPR will obscure accuracy even more by making it more difficult to assess whether the data within the RDS (WHOIS) repository is accurate or not. Two of the recommendations were deemed to be fully implemented and three were partially or not implemented.

Privacy/Proxy: The GNSO Policy Development Process (PDP) on Privacy and Proxy service providers was triggered by WHOIS1 Recommendation #10. The PDP has completed, and the Implementation Review Team is in the process of finalizing implementation. Since the ICANN Board acted fully on the recommendation, it is deemed to have been fully implemented.

However, since the RDS-WHOIS2 Review Team could not assess implementation effectiveness, the review team has asked that the ICANN Board recommend that the next RDS (WHOIS) Review Team address that. There is also a fallback recommendation in the case that the Privacy/Proxy policy implementation is unduly delayed.

Common RDS (WHOIS) Interface: WHOIS1 Recommendation #11 required that a single RDS (WHOIS) portal be created and operated by ICANN to provide the community with a “one-stop shop” for all RDS (WHOIS) queries. That was done and the recommendation is deemed to be fully implemented. However, there is a follow-on recommendation suggesting metrics and/or a service level agreement for the portal to ensure full effectiveness. Compliance efforts with respect to GDPR have also broken some aspects of the portal (since the registry is no longer the definitive source for thick RDS (WHOIS) information) and a recommendation addresses this new issue.

Internationalized Registration Data: WHOIS1 Recommendations #12-14 relate to the use of internationalized character sets for registration data (name, address, etc.)² A number of studies and a PDP were carried out in response to these WHOIS1 recommendations. The resultant policy and practices are not yet in place because they depend on a new RDS (WHOIS) system which is not yet implemented (using the Registration Data Access Protocol – RDAP). Because all of the work requested was carried out, the recommendations are deemed to have been fully implemented. As with Recommendation #10 Privacy/Proxy, the ICANN Board is requested to recommend that the next RDS-WHOIS Review Team review the effectiveness of the actual implementation.

Planning/Reports: WHOIS1 Recommendations #15-16 addressed the need for planning and reporting implementation of WHOIS1 recommendations. These plans and reports were done, but were not found to be as complete or as useful as intended. The recommendations were therefore found to be partially implemented.

Anything New: All new RDS (WHOIS)-related policies and procedures enacted since the WHOIS1 Review Team published its recommendations were inventoried and inspected by the RDS-WHOIS2 Review Team. Most were not deemed to be problematic, but one was found to require further recommendations which were included in the comparable sections related to the WHOIS1 Recommendations.

Law Enforcement: The ICANN Bylaws call for each RDS-WHOIS Review to assess whether the RDS (WHOIS) effectively meets the needs of Law Enforcement. A survey was carried out to assess this, and was also used to try to understand, in a preliminary way, whether GDPR was likely to have an impact on meeting those needs. In summary, it would appear that RDS (WHOIS) is an important tool for Law Enforcement and that preliminary input indicates that the GDPR may have a significant impact. This report details the results of this survey in [Section 5](#).

Consumer Trust: The assessment of whether RDS (WHOIS) enhances consumer trust is also a requirement mandated by the ICANN Bylaws for each RDS-WHOIS review. This was carried out by examining available documentation, and specifically a careful review of how WHOIS1 addressed the issue. The impact of WHOIS on both end users and registrants is considered. No new recommendations are being made.

Safeguarding Registrant Data: The assessment of RDS (WHOIS) safeguards for registrant data looked at privacy, whether registrant data was adequately protected from access or

² The WHOIS1 Report incorrectly classified these recommendations under the title Internationalized Domain Names (IDNs). In fact, the need for internationalized registration data applies to both IDNs as well as traditional names.

change, and whether appropriate breach notices are contractually required. In the original WHOIS, there was no attempt to address registrant data privacy, and changes made to RDS (WHOIS) requirements to enable GDPR compliance will obviously improve registrant data privacy. The ICANN contracts with registries, registrars and escrow agents include varying requirements for how data is to be protected from inappropriate access or change. One of the contracts requires that ICANN be notified in the case of breach, and the others were silent on this topic. A recommendation is made to address these issues.

ICANN Bylaws: The Bylaw governing the RDS-WHOIS2 Review allows each review team to make recommendations on revision of the Bylaws. The RDS-WHOIS2 Review Team noted that the requirement to review safeguarding of registrant data and the section referring to OECD Guidelines were somewhat redundant. Moreover, the current focus on privacy and the GDPR has made the reference to the voluntary OECD guidelines less relevant. The review team is recommending that these two references be removed and replaced with a more generic requirement to review to what extent RDS (WHOIS) policy and practice safeguards registrant data and addresses applicable data protection and cross border data transfer requirements.

1.1.6 Review Conclusions

ICANN organization implementation reports for the 16 recommendations from the WHOIS1 Review Team state that all 16 have been fully implemented.

The RDS-WHOIS2 Review Team's conclusions are that of the 16 recommendations, eight were fully implemented, seven were partially implemented, and one was not implemented.³

As a result of the analysis of the past WHOIS1 Review Team recommendations, as well as this review team's new findings and recommendations, the RDS-WHOIS2 Review Team is making 22 new recommendations which are summarized in the following section.

1.2 Review Team Recommendations

The RDS-WHOIS2 Review Team's recommendations are summarized in this table.

Recommendation Rx.n are recommendations that follow up on Recommendation x⁴ of the first WHOIS Review. Recommendations LE.n, SG.n, CC.n and BY.n are recommendations related to the new work done by the present review team under its investigations related to Law Enforcement, Safeguarding Registrant Data, Contractual Compliance and the Bylaw governing Specific Reviews. Each full recommendation, with related findings and rationale, may be found in the corresponding sections of the full Final Report.

Implementation of all recommendations identified as High Priority should begin as soon as possible once approved by the Board and once all preconditions are met. Recommendations assigned medium or low priority need to be considered with respect to overall ICANN priorities, but should not be deferred indefinitely.

³ Although the intent of the recommendation was partially addressed in a number of ways, the actual recommendation was deemed to be not feasible in the original ICANN organization evaluation and that did not change.

⁴ In the case of R5.n, R12.n and R15.n, they are follow-up recommendation of the original R5-9, R12-14 and R15-16 respectively.

The consensus level of for each recommendation was determined by polling all review team members. The member representing the ICANN Board chose to abstain since the recommendations are being made to the Board. One other review team member chose to stop participating in the review team for personal reasons and the review team decided that it was too late in the process to bring a new person onto the team. As a result, the consensus level was determined based on the nine remaining team members.

Although Priority indicated the overall position of the review team, the impact, feasibility and implementation guidelines will all need to be considered when considering Board approval and implementation.

#	Recommendation	Priority	Consensus
R1.1	To ensure that RDS (WHOIS) is treated as a strategic priority, the ICANN Board should put into place a forward-looking mechanism to monitor possible impacts on the RDS (WHOIS) from legislative and policy developments around the world.	High	Full Consensus
R1.2	To support this mechanism, the ICANN Board should instruct the ICANN organization to assign responsibility for monitoring legislative and policy development around the world and to provide regular updates to the ICANN Board.	High	Full Consensus
R1.3	The ICANN Board, in drafting the Charter of a Board working group on RDS, should ensure the necessary transparency of the group's work, such as by providing for records of meetings and meeting minutes, to enable future review of its activities.	Medium	Full Consensus
R3.1	The ICANN Board should direct the ICANN organization to update all of the information related to RDS (WHOIS) and by implication other information related to the registration of second-level gTLDs domains. The content should be revised to make the information readily accessible and understandable, and it should provide details of when and how to interact with ICANN organization or contracted parties. Although not the sole focus of this recommendation, interactions with ICANN organization Contractual Compliance, such as when filing WHOIS Inaccuracy Reports, should be a particular focus. The revision of this web documentation and instructional material should not be undertaken as a purely internal operation but should include users and potentially focus groups to ensure that the final result fully meets the requirements. The resultant outward facing documentation of registrant and RDS (WHOIS) issues should be kept up to date as changes are made to associated policy or processes.	Medium	Full Consensus

#	Recommendation	Priority	Consensus
R3.2	With community input, the ICANN Board should instruct the ICANN organization to identify groups outside of those that routinely engage with ICANN organization, and these should be targeted through RDS (WHOIS) outreach. An RDS (WHOIS) outreach plan should then be developed, executed, and documented. There should be an ongoing commitment to ensure that as RDS (WHOIS) policy and processes change, the wider community is made aware of such changes. WHOIS inaccuracy reporting was identified as an issue requiring additional education and outreach and may require a particular focus. RDS (WHOIS) outreach should be included when considering communications in underserved regions. The need for and details of the outreach may vary depending on the ultimate General Data Protection Regulation (GDPR) implementation and cannot be detailed at this point.	High	Full Consensus
R4.1	The ICANN Board should initiate action to ensure ICANN Contractual Compliance is directed to proactively monitor and enforce registrar obligations with regard to RDS (WHOIS) data accuracy using data from incoming inaccuracy complaints and RDS accuracy studies or reviews to look for and address systemic issues. A risk-based approach should be executed to assess and understand inaccuracy issues and then take the appropriate actions to mitigate them.	High	Full Consensus
R4.2	The ICANN Board should initiate action to ensure that ICANN Contractual Compliance is directed to cross-reference existing data from incoming complaints and studies such as the ARS to detect patterns of failure to validate and verify RDS (WHOIS) data as required by the RAA. When such a pattern is detected, compliance action or an audit should be initiated to review compliance of the Registrar with RDS (WHOIS) contractual obligations and consensus policies.	High	Full Consensus
R5.1	The Accuracy Reporting System, which was instituted to address concerns regarding RDS (WHOIS) contact data accuracy, has demonstrated that there is still an accuracy concern and therefore such monitoring must continue. ICANN organization should continue to monitor accuracy and/or contactability through either the ARS or a comparable tool/methodology.	High	Full Consensus

#	Recommendation	Priority	Consensus
R10.1	The Board should monitor the implementation of the PPSAI. If the PPSAI policy does not become operational by 31 December 2019, the ICANN Board should ensure an amendment to the 2013 RAA (or successor documents) is proposed that ensures that the underlying registration data of domain name registrations using Privacy/Proxy providers affiliated with registrars shall be verified and validated in application of the verification and validation requirements under the RAA unless such verification or validation has already occurred at the registrar level for such domain name registrations.	Low	Full Consensus
R10.2	Reviewing the effectiveness of the implementation of WHOIS1 Recommendation #10 should be deferred. The ICANN Board should recommend that review be carried out by the next RDS (WHOIS) Review Team after PPSAI Policy is implemented.	Low	Full Consensus
R11.1	The ICANN Board should direct the ICANN organization to define metrics or SLAs to be tracked and evaluated to determine consistency of results of queries and use of any common interface (existing or future) used to provide one-stop access to registration data across all gTLDs and registrars/resellers. Specific metrics that should be tracked for any such common interface include: <ul style="list-style-type: none"> ● How often are RDS (WHOIS) fields returned blank? ● How often is data displayed inconsistently (for the same domain name), overall and per gTLD? ● How often does the tool not return any results, overall and per gTLD? ● What are the causes for the above results? 	Low	Full Consensus
R11.2	The ICANN Board should direct the ICANN organization to ensure that the common interface displays all applicable output for each gTLD domain name registration as available from contracted parties, including multiple versions when the outputs from registry and registrar differ. The common interface should be updated to address any policy or contractual changes to maintain full functionality.	High	Full Consensus
R12.1	Reviewing the effectiveness of the implementation of Recs #12-14 should be deferred. The ICANN Board should recommend that review to be carried out by the next RDS Review Team after RDAP is implemented, and the translation and transliteration of the registration data launches.	Low	Full Consensus

#	Recommendation	Priority	Consensus
R15.1	The ICANN Board should ensure that implementation of RDS-WHOIS2 Review Team recommendations is based on best practice project management methodology, ensuring that plans and implementation reports clearly address progress, and applicable metrics and tracking tools are used for effectiveness and impact evaluation.	Medium	Full Consensus
LE.1	The ICANN Board should resolve that ICANN organization conduct regular data gathering through surveys and studies to inform a future assessment of the effectiveness of RDS (WHOIS) in meeting the needs of law enforcement. This will also aid future policy development (including the current Temporary Specification for gTLD Registration Data Expedited Policy Development Process and related efforts).	High	Full Consensus
LE.2	The ICANN Board should consider conducting comparable surveys and/or studies (as described in LE.1) with other RDS (WHOIS) users working with law enforcement on a regular basis.	High	Full Consensus
SG.1	The ICANN Board should require that the ICANN org, in consultation with data security and privacy expert(s), ensure that all contracts with contracted parties (to include Privacy/Proxy services when such contracts exist) include uniform and strong requirements for the protection of registrant data and for ICANN to be notified in the event of any data breach. The data security expert(s) should also consider and advise on what level or magnitude of breach warrants such notification. In carrying out this review, the data security and privacy expert(s) should consider to what extent GDPR regulations, which many but not all ICANN contracted parties are subject to, could or should be used as a basis for ICANN requirements. The ICANN Board should initiate action intended to effect such changes. The ICANN Board should consider whether and to what extent notifications of breaches that it receives should be publicly disclosed.	Medium	Full Consensus
CC.1	The ICANN Board should initiate action intended to ensure that gTLD domain names suspended due to RDS (WHOIS) contact data which the registrar knows to be incorrect, and that remains incorrect until the registration is due for deletion, should be treated as follows: (1) The RDS (WHOIS) record should include a notation that the domain name is suspended due to incorrect data; and (2) Domain names with this notation should not be unsuspending without correcting the data.	High	Full Consensus

#	Recommendation	Priority	Consensus
CC.2	The ICANN Board should initiate action intended to ensure that all gTLD domain name registration directory entries contain at least one full set of either registrant or admin contact details comparable to those required for new registrations under the 2013 RAA (or any subsequent version thereof) or applicable policies.	Medium	Full Consensus
CC.3	The ICANN Board should take steps to ensure that ICANN Contractual Compliance is adequately resourced factoring in any increase in workload due to additional work required due to compliance with GDPR or other legislation/regulation.	High	Full Consensus
CC.4	The ICANN Board should recommend the GNSO adopt a risk-based approach to incorporating requirements for measurement, auditing, tracking, reporting and enforcement in all new RDS policies.	Low	Full Consensus
BY.1	The ICANN Board should take action to extend the reference to “safeguarding registrant data” in ICANN Bylaws section 4.6(e)(ii) and replace section 4.6(e)(iii) of the ICANN Bylaws (which refers to the OECD Guidelines) with a more generic requirement for RDS (WHOIS) Review Teams to assess how well RDS (WHOIS) policy and practice addresses applicable data protection and cross border data transfer regulations, laws and best practices.	Medium	Full Consensus



One World, One Internet

Visit us at icann.org



[@icann](https://twitter.com/icann)



facebook.com/icannorg



youtube.com/icannnews



flickr.com/icann



linkedin/company/icann



slideshare/icannpresentations



soundcloud/icann



instagram.com/icannorg