

Recommendations 12-14: IDNs

Implementation Briefing for RDS-WHOIS2 Review Team

March 5, 2018



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RDS/WHOIS1 Review Team's Recommendations 12 - 14: Internationalized Domain Names (IDNs)

Recommendation 12

ICANN should task a working group within six months of publication of this report, to determine appropriate internationalized domain name registration data requirements and evaluate available solutions (including solutions being implemented by ccTLDs). At a minimum, the data requirements should apply to all new gTLDs, and the working group should consider ways to encourage consistency of approach across the gTLD and (on a voluntary basis) ccTLD space. The working group should report within a year of being tasked.

Recommendation 13

The final data model, including (any) requirements for the translation or transliteration of the registration data, should be incorporated in the relevant Registrar and Registry agreements within 6 months of adoption of the working group's recommendations by the ICANN Board. If these recommendations are not finalized in time for the next revision of such agreements, explicit placeholders for this purpose should be put in place in the agreements for the new gTLD program at this time, and in the existing agreements when they come up for renewal.

Recommendation 14

Metrics should be developed to maintain and measure the accuracy of the internationalized registration data and corresponding data in ASCII, with clearly defined compliance methods and targets.

ICANN Board Action for Recommendations 12 - 14

The Board directs the CEO to have Staff:

1. Task a working group to determine the appropriate internationalized domain name registration data requirements, evaluating any relevant recommendations from the SSAC or GNSO
2. Produce a data model that includes (any) requirements for the translation or transliteration of the registration data, taking into account the results of any PDP initiated by the GNSO on translation/ transliteration, and the standardized replacement protocol under development in the IETF's Web-based Extensible Internet Registration Data Working Group
3. Incorporate the data model in the relevant Registrar and Registry agreements within 6 months of adoption of the working group's recommendations by the ICANN Board or put explicit placeholders in place for gTLD program agreements, and existing agreements
4. Evaluate available solutions (including solutions being implemented by ccTLDs)
5. To provide regular updates on technical development of the IRD, including the estimated timeline or roadmap of such technical development, so that the ICANN community, particularly the IDN gTLD applicant, can fully prepare for implementation of IRD features in its operation. Investigate using automated tools to identify potentially inaccurate internationalized gTLD domain name registration data in gTLD registry and registrar services, and forward potentially inaccurate records to gTLD registrars for action.

ICANN Board's rationale for Board action on recommendations 12-14

1. The Board notes that both SSAC and the GNSO approved the recommendations in the IRD-WG Final Report, and the GNSO requested an issue report on the translation and transliteration of registration data, which has broader policy implications that could be addressed through a GNSO PDP once the Final Issue Report is produced. The final data model also could either be addressed via a PDP (for uniform application on all parties) or via direct contract negotiations with registrars or registries, or could be incorporated at the time of renewal of these agreements.
2. The Board notes that the working group should use the IRDWG final report as well as the SSAC advisory on Domain Name Registration Data Model as a starting point of discussion.

3. The Board also recognizes the effort underway in the IETF's Web-based Extensible Internet Registration Data (WEIRDS) Working Group to develop a standardized replacement WHOIS protocol.

IDN and Translation & Transliteration of Contact Activities

Over the past several years, there have been a lot of work relating to internationalization of registration data. This briefing document provides the Review Team with a summary of this work and links to additional detailed information.

The 2009 Internationalized Registration Data Working Group

In June 2009, the ICANN Board passed a [resolution](#) requesting the GNSO and SSAC to form an Internationalized Registration Data Working Group (IRD WG) to study the feasibility and suitability of introducing display specifications for internationalization of registration data. In May 2012, this IRD WG published its [final report](#). On the suitability question, the IRD WG had three (3) main findings:

1. It is desirable for registrants to be able to submit domain name registration data in character sets other than ASCII, but this desirability should be balanced against other uses of the data due to the global nature of the Internet.
2. All basic data elements should be internationalized with the exception of the sponsoring registrar data so as to aid law enforcement and IP investigations.
3. There were four (4) models for translation and transliteration (T/T) of internationalized contact data. However, the IRD WG could not reach consensus on a model, and recommended an issues report on T/T. Related, the IRD WG agreed that the current WHOIS protocol is not capable of handling query and display of internationalized registration data and encouraged the ICANN community to identify, evaluate and adopt an alternative protocol that would meet the needs of internationalization.

As to the question of feasibility, the IRD WG agreed that it is feasible to introduce submission and display specifications to address internationalized registration data.

In October 2012, following the IRD WG's recommendation, the GNSO requested an [issue report](#) on T/T.

The 2010 WHOIS Review

Concurrent to the IRD WG's work, the first WHOIS Review Team conducted a review of the then current WHOIS. The Review Team published its [final report](#) in May 2012, around the same time that the IRD WG published its final report. In its final report, the Review Team recognized there is ongoing work in the area of internationalized registration data, and provided three (3) recommendations.

1. ICANN should task a working group to determine appropriate internationalized domain name registration data requirements and evaluate available solutions (including solutions being implemented by ccTLDs).

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2. The final data model, including any requirements for the translation and transliteration of the registration data, should be incorporated in the relevant Registrar and Registry agreements.
 3. Metrics should be developed to maintain and measure the accuracy of the internationalized registration data and corresponding data in ASCII.

These recommendations led to the [creation](#) of the Internationalized Registration Data Expert Working Group (IRD EWG) as directed by an ICANN Board [resolution](#) passed in November 2012.

The 2013 Internationalized Registration Data Expert Working Group

The Internationalized Registration Data Expert Working Group (IRD EWG)'s work occurred in parallel to the GNSO T/T PDP, and was tasked with determining submission and display requirements and data model. The IRD EWG spent a lot of time deliberating on the extent that internationalized data be localized--always, on demand, display in English and give users option? The IRD EWG published its [final report](#) in September 2015. The report identified three (3) principles to guide the internationalization of registration data:

1. User capability principle – In defining a requirement for a particular data element or category of data elements, the capability of the data-submitting user should be the containing factor.
2. Simplicity and reusability principle – Where possible, existing standards that are widely used for handling internationalized data should be applied.
3. Extensibility – where possible, the data model should be able to be easily extended to tailor to the evolution of data elements displayed by directory services for various TLD registries and registrars.

Based on these principles, the IRD EWG proposed two (2) high-level requirements:

1. Registrants should only be required to input registration data in a language or script that they are skilled at.
2. Unless explicitly stated, all data elements should be tagged with languages and scripts in use and this information should always be available with the data elements.

The IRD EWG also categorized all registration data elements into groups and proposed internationalization requirements for each category. The IRD WG recognized that there may be policy implications raised by its final report and suggested that the Board send the final report to the GNSO for appropriate follow-up.

The PDP on Translation and Transliteration of Contact Information

Per the recommendation of the 2009 IRD WG, the GNSO requested an issues report on translation and transliteration of contact data. In 2013, the GNSO adopted the issues report and initiated a PDP. The T/T PDP WG published its [final report](#) in June 2015, and included seven (7) recommendations:

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1. Recommendation #1 The Working Group recommends that it is not desirable to make transformation of contact information mandatory. Any parties requiring transformation are free to do so on an ad hoc basis outside Whois or any replacement system, such as the Registration Data Access Protocol (RDAP). If not undertaken voluntarily by registrar/registry (see Recommendation #5), the burden of transformation lies with the requesting party.
 2. Recommendation #2 Whilst noting that a Whois replacement system should be capable of receiving input in the form of non-ASCII script contact information, the Working Group recommends its data fields be stored and displayed in a way that allows for easy identification of what the different data entries represent and what language(s)/script(s) have been used by the registered name holder.
 3. Recommendation #3 The Working Group recommends that the language(s) and script(s) supported for registrants to submit their contact information data may be chosen in accordance with gTLDprovider business models.
 4. Recommendation #4 The Working Group recommends that, regardless of the language(s)/script(s) used, it is assured that the data fields are consistent to standards in the Registrar Accreditation Agreement (RAA), relevant Consensus Policy, Additional Whois Information Policy (AWIP) and any other applicable policies. Entered contact information data are validated, in accordance with the aforementioned Policies and Agreements and the language/script used must be easily identifiable.
 5. Recommendation #5 The Working Group recommends that if the transformation of contact information is performed, and if the Whois replacement system is capable of displaying more than one data set per registered name holder entry, these data should be presented as additional fields (in addition to the authoritative local script fields provided by the registrant) and that these fields be marked as transformed and their source(s) indicated.
 6. Recommendation #6 The Working Group recommends that any Whois replacement system, for example RDAP, remains flexible so that contact information in new scripts/languages can be added and expand its linguistic/script capacity for receiving, storing and displaying contact information data.
 7. Recommendation #7 The Working Group recommends that these recommendations are coordinated with other Whois modifications where necessary and are implemented and/or applied as soon as a Whois replacement system that can receive, store and display non-ASCII characters, becomes operational.

In [adopting](#) the T/T PDP recommendations, the Board tasked the T/T Implementation Review Team (IRT) to incorporate the work of the 2013 IRD EWG to the extent that it facilitates the T/T implementation.

Implementation of the Translation and Transliteration of Contact Information PDP recommendations

One difference between the 2013 IRD EWG's recommendations and the T/T PDP WG's recommendations is that the T/T PDP WG determined that translation and transliteration of contact data should not be mandatory, and that market forces should drive the determination. For example, if a U.S. registrar would like to operate in the Chinese market, that registrar might want to offer registrants the ability to provide registration data in Chinese, but the decision is up to that registrar. It should be noted that the IPC submitted a minority statement in the final report

recommending mandatory translation and/or transliteration (transformation) of contact information in all generic top-level domains (gTLDs), however the statement did not address who would bear the cost burden.

The T/T IRT, which began its work in July 2016, and ICANN org are reviewing a draft policy document that anchors requirements for translating/transliterating contact data to the IRD EWG's data model for tagging RDS outputs with a language tag. The IRT does not support universal tagging of all original registration data to enable translation/transliteration of that data. This has been deemed as excessively burdensome on contracted parties' operational processes. As the document is currently structured, these requirements will only apply to those registries and registrars who opt to perform translations/transliterations (transformations) of contact information and "tag" the original and transformed contact information with a language tag. If a contracted party does not opt to perform a transformation of contact information, they have no obligation to collect language/script data from registrants (or to determine the language/script by any other means). As a corollary, such a party would have no obligation to display a language tag next to the original registration data entered by a registrant. Tagging is not mentioned in the T/T PDP recommendations, but is mentioned in the IRD EWG recommendations, but as IRD EWG recommendations are not consensus policy, they are taken as input and not requirements.

T/T PDP Recommendation #7 states that implementation of the T/T recommendations should be coordinated with "other WHOIS modifications." The IRT has taken this part to mean that the recommendations and any policy may need to be forwarded to and/or reviewed by the RDS PDP Working Group. Their rationale is that the RDS PDP may put forth recommendations in the area of Internationalized Registration Data. They want to avoid implementing a policy that may be counter-acted by potential work of the RDS PDP. The T/T IRT has yet to discuss how to approach any coordination with the RDS PDP.

Currently, the T/T IRT is awaiting the results of the RDAP pilot program, which is due to conclude in July 2018. The T/T implementation project is dependent on the deployment of RDAP before the final T/T consensus policy can be implemented. This RDAP dependency is consistent with the recognition of the 2009 IRD WG. The 2013 Registrar Accreditation and Registry Agreements incorporated language requiring registrars and registries to implement a replacement protocol supporting access to domain name registration data after it is requested by ICANN.

As background information, RDAP stemmed from [SAC 051](#), which the Board [adopted](#) in October 2011. The IETF community then began work on a replacement WHOIS protocol. In March 2015, the IETF published [RDAP RFCs](#). ICANN organization has since been working with the contracted parties to implement RDAP. In September 2017, ICANN [announced](#) a voluntary RDAP [pilot](#) program. The goal of the program is to develop a baseline profile(s) to guide implementation, establish an implementation target date, and develop a plan for the implementation of a production RDAP service. The program is expected to conclude on 31 July 2018.

Accuracy of Internationalized Registration Data

Regarding the RDS/WHOIS1 Review Team's third IRD recommendation that metrics should be developed to maintain and measure the accuracy of the internationalized registration data and corresponding data in ASCII, this is currently being performed as part of the Accuracy Reporting System (ARS).

Estimated ICANN Org Time Spent for Implementation

Implementation of recommendations 12-14 resulted in the work of the 2013 IRD EWG as well as incorporation of IDNs in the ARS. The 2013 IRD EWG's work took two (2) years from September 2013 through September 2015. One-quarter of an FTE's time was spent during these two years supporting the IRD EWG. Estimated ICANN org's time spent on the ARS will be provided in the Data Accuracy briefing paper.

Useful Links

Translation and Transliteration PDP's Final Issue Report, March 2013

<https://gnso.icann.org/en/issues/gtlds/transliteration-contact-final-21mar13-en.pdf>

Translation and Transliteration PDP web page

<https://gnso.icann.org/en/group-activities/active/transliteration-contact>

Translation and Transliteration PDP Working Group Final Report, Jun 2015

[https://community.icann.org/download/attachments/53779599/Final%20Report%20Final%20\(with%20links%20working\).pdf](https://community.icann.org/download/attachments/53779599/Final%20Report%20Final%20(with%20links%20working).pdf)

IRD Expert Working Group Final Report, September 2015

<http://whois.icann.org/sites/default/files/files/ird-expert-wg-final-23sep15-en.pdf>

Translation and Transliteration IRT wiki

<https://community.icann.org/display/gnsottcii/Translation+and+Transliteration+of+Contact+Information+IRT+Home>

Translation and Transliteration Implementation Project Status

<https://www.icann.org/resources/pages/transliteration-contact-2016-06-27-en>

RDAP Webpage

<https://www.icann.org/rdap>

