

Roadmap to Implement SAC 051



## **Roadmap to Implement SAC 051**

**4 June 2012**

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## Executive Summary

ICANN's Security and Stability Advisory Committee (SSAC)<sup>1</sup> published SAC 051: *SSAC Report on Domain Name WHOIS Terminology and Structure*<sup>2</sup> recommending that the ICANN community evaluate and adopt a replacement for the WHOIS protocol and adopt clear terminology for various terms that have been traditionally called Whois (or WHOIS)<sup>3</sup>. This report specifically targets, among other things, the "internationalization" of the WHOIS protocol, reflecting concern about the inability of the protocol to consistently handle non-ASCII data. SSAC 051 report recognizes the importance of the Whois service to the community, as well as the needs for its improvement.

As requested by the ICANN Board, what follows is a proposed roadmap for the coordination of the technical and policy discussions necessary to implement the recommendations described in SAC 051. The SAC 051 report makes three recommendations. This document considers each, describes options and makes specific recommendations for moving forward.

First, for clarity, new protocols should be named in a technically accurate and clear way. For example, Domain Name Registration Data would be made available for access through a Domain Name Registration Data Directory Service (rather than Whois service). (See section 2 of this paper.)

Second, a replacement protocol to accommodate data in multiple encodings should be developed starting with the work done to date in the IETF on a new protocol. We recommend multiplying that earlier work by strongly encouraging the participation of ccTLD and gTLD registries and registrars. This roadmap recommends a multipronged approach for the adoption of a replacement for the WHOIS protocol. In addition, gTLD registries and registrars could adopt provisions in their agreements, anticipating the replacement protocol and conditionally agreeing to adopt it when issued. Also, ccTLDs can be asked to adopt the new protocol voluntarily.

Finally, the ICANN Board should ask the GNSO to examine the issue of replacement protocols to accommodate multiple scripts and for the purpose of developing informal or formal policy advice. Working groups might be useful: similar to those that considered trademark protections or consumer safeguards.

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<sup>1</sup> SSAC advises the ICANN community and Board on matters relating to the security and integrity of the Internet's naming and address allocation systems. See <http://www.icann.org/en/committees/security/>

<sup>2</sup> <http://www.icann.org/en/committees/security/sac051.pdf>

<sup>3</sup> In this report the term "WHOIS" in caps is used when referring to the RFC 3912 protocol, "Whois" is used otherwise. SAC 051 recommended terminology was not used intentionally.

The body of this paper describes the options considered and also provides background for those unfamiliar with the issues and history of work that has been done.

### 1. Introduction

Created in the 1980s, the WHOIS protocol [3] was used by Internet operators to identify individuals or entities responsible for the operation of a network resource on the Internet. The Whois service has since evolved into a tool used for many purposes. However, as usage of the service evolved, few changes have been made to the protocol that supports the service. As a result, there is growing concern that the protocol would not meet the needs of the community.

Beginning in 2002, ICANN's Security and Stability Advisory Committee (SSAC) published various advisories describing deficiencies related to the WHOIS protocol, service and data schema [9,10,11,12,13,14], most recently SAC 051: *SSAC Report on Domain Name WHOIS Terminology and Structure* [15]. SAC 051 summarizes the previous advisories, and among other things, recommends that the ICANN community evaluate and adopt a replacement protocol.

In June 2010, the ICANN Board called for an SSAC-GNSO working group to determine the feasibility of introducing display specifications to address the "internationalization" of Whois service, reflecting concern about the inability of the WHOIS protocol to consistently display non-US ASCII Registration Data. This work is nearing completion; see the final report [8]. Reinforcing its concerns with Whois service deficiencies, on 28 October 2011, the ICANN Board approved a resolution<sup>4</sup> directing staff to produce, in consultation with the community, a roadmap for the coordination of the technical and policy discussions necessary to implement the recommendations outlined in SAC 051.

As requested by the Board resolution, staff forwarded SAC 051 to ICANN's Advisory Committees and Supporting Organizations for their advice with regard to implementing the SSAC recommendations, and also forwarded SAC 051 to the Whois Policy Review Team, and asked for input within 60 days. The GNSO Council responded, with an update documenting the activities related to the subject that are underway in the GNSO<sup>5</sup>, so that these could be factored into the "Roadmap".

This roadmap document is produced by ICANN to implement the Board's resolution. It has three main sections: Section 2 outlines implementation options and proposes recommendations regarding SAC 051 recommendation 1. Section 3 does the same for SAC 051 recommendations 2 and 3. Finally section 4 provides background, a survey of a number of policy and technical activities leading to the SSAC paper (SAC 051) and the Board's request for this roadmap. ICANN thanks the input from the community on the

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<sup>4</sup> See Appendix 1 for the Board Resolution.

<sup>5</sup> <http://gnsso.icann.org/correspondence/van-gelder-to-board-17dec11-en.pdf>

draft roadmap for implementation published previous to this document<sup>6</sup>.

## 2. SAC 051 Recommendation 1

First recommendation is:

*The ICANN community should adopt the terminology outlined in this report in documents and discussions, in particular:*

- **Domain Name Registration Data (DNRD).** *The data that domain name registrants provide when registering a domain name and that registrars or registries collect.*
- **Domain Name Registration Data Access Protocol (DNRD-AP).** *The components of a (standard) communications exchange—queries and responses—that specify the access to DNRD.*
- **Domain Name Registration Data Directory Service (DNRD-DS).** *The service(s) offered by domain name registries and registrars to implement the DNRD-AP and to provide access to DNRD-DS.*

*Additional terminology includes “DNRDe,” “DNRD Policy,” “DNRD-DS Policy,” “Internationalized DNRD,” and “Localized DNRD.” The term “WHOIS” should only be used when referring to the protocol as currently specified in RFC 3912.*

### 2.1. Options for Adopting the New Terminology

Recognizing that it is important to use well-defined and coherent taxonomy in technical and policy discussions, especially when precision is needed, the following are possible steps for consideration:

1. Formation of a small implementation assistance group with participation from each of the interested constituencies and SOs and ACs to develop an updated proposal on terminology. Set a short timeline to produce a terminology proposal.
2. Preparation of a brief summary of the recommended terminology. This could be shared with ICANN stakeholders, for example through SO/AC chair lists to promote their usage.
3. Use of the preferred terminology in ICANN documents that are prepared, especially when precision is needed or confusion is likely.
4. Recognizing that existing language is embedded in the culture, a transition is required to gain acceptance of the new language. In the initial phase the new terms would be used next to the old terms in parenthesis, and so on.

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<sup>6</sup> <http://www.icann.org/en/news/public-comment/sac-051-draft-roadmap-18feb12-en.htm>

## 2.2. Recommendations for Adopting the New Terminology

While use of the correct terminology is important, the main goal is to improve the clarity of the ideas being communicated. Care should be taken when using suggested acronyms in more general conversations as it could create confusion for a non-technical or new audience. The ICANN Board and the community may want to consider abbreviated terms that are not “acronym-based” and thus easier for many to say such as:

- Whois data should be referred to as Domain Name Registration data
- WHOIS protocol would be one of the Domain Name Registration Data Access Protocols
- Whois service should be referred to as Domain Name Registration Data Directory Service

It is recommended to take the following steps to implement SAC 051 recommendation 1:

1. Form a small implementation assistance group with participation from each of the interested constituencies and SOs and ACs to develop an updated proposal on terminology. Set a short timeline to produce a terminology proposal.
2. Prepare a one-page summary of the recommended terminology. This should be shared within staff and stakeholders, through SO/AC chairpersons.
3. Transition to the preferred terminology in documents over a period of time by incorporating them into working documents accompanied by definitions.

## 3. SAC 051 Recommendations 2 and 3

Recommendations 2 and 3 are closely related, therefore can be treated as one unit, i.e., the replacement of WHOIS with a new protocol that includes the features mentioned in the recommendations below.

Second recommendation is:

*The ICANN community should evaluate and adopt a replacement domain name registration data access protocol that supports the query and display of Internationalized DNRD as well as addressing the relevant recommendations in SAC 003, SAC 027 and SAC 033.*

This recommendation asks the community to evaluate and adopt a replacement protocol to support “relevant” recommendations from previous SSAC reports. We surveyed

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recommendations from SAC 003, SAC 027, SAC033, and found the following are relevant to the protocol:<sup>7</sup>

- *A standard format for Whois data must be developed.*
- *A Whois service that supports searching in the current architecture of distributed indices and separated registry and registrar services must be developed.*
- *A publicly available list of publicly available Whois servers must be available using a widely known and available resource, e.g., a web page or DNS SRV records.*
- *A Whois service must discourage the harvesting and mining of its data.*
- *The ICANN community should adopt an Internet standard directory service as an initial step toward deprecating the use of the WHOIS protocol in favor of a more complete directory service. SSAC encourages the ICANN community to study the standards developed by the IETF's Cross Registry Information Service Protocol (CRISP) Working Group. In particular, SSAC urges the GNSO to consider the requirements for CRISP identified in RFC 3707 and the set of RFCs associated with the Internet Registry Information Service (IRIS) (RFCs 3981 - 3983) which appears to provide sufficient features and services to meet the needs of the domain registration community.*
- *ICANN should work with all TLD registry operators to develop a timeline and transition plan for migrating from the current WHOIS service to a successor Internet "domain" directory service.*

Third recommendation is:

*The ICANN community should develop a uniform and standard framework for accessing DNRD that would provide mechanisms to define and implement a range of verification methods, credential services, and access control capabilities.*

It is important to note that the goal of the protocol is provide capability to implement policies, but the protocol *should not* dictate policy, which should be developed in the respective policy bodies.

### **3.1. Options for the Replacement of the WHOIS Protocol**

To replace the WHOIS protocol, there needs to be the: 1) standardization of a new protocol in a technical standards body like the IETF; and 2) adoption of the new protocol by generic top-level domain registries (existing and new), registrars, and country code top-level domain registries.

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<sup>7</sup> The remaining recommendations included in SAC 003, SAC 027 and SAC 033 are not relevant to the replacement of WHOIS, therefore are considered not relevant to the SAC 051 recommendation and thus are not considered in this document.

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There are a number of options that could be considered to support the adoption of the new protocol and eventual replacement of WHOIS by registrars, and gTLD and ccTLD registries.

Three such options are explored below; adoption through:

- A Policy Development Process (PDP),
- Contract negotiations, or
- Incentives to spur voluntary adoption

For generic top-level domain (gTLD) registries and registrars, ICANN's agreements with them [4,5] require compliance with various specifically stated procedures and also with "*consensus policies*." Thus the two adoption options for gTLD registries and registrars are adoption through consensus policy and adoption through contract negotiation with ICANN. For country code top-level (ccTLD) registries, it is outside ICANN's scope to require adoption via a policy and for most of them there is no contract with ICANN that could be updated. Finally, different incentives can be applied to both gTLD and ccTLD registries and registrars to spur adoption.

The following subsections describe each approach, in which cases it would be applicable, and their pros and cons.

### 3.1.1. Standardization of a New Protocol

The discussion about the replacement protocol including its features should happen in a technical standards body such as the IETF. There is already a working group<sup>8</sup> in the IETF to standardize a replacement for the WHOIS protocol. ICANN should encourage registries (ccTLDs and gTLDs) and registrars to participate in that discussion. For more details on why a new protocol see section 4.4. "The Need for a New Protocol".

Although, it may seem appropriate to first produce a set of requirements for that protocol inside ICANN, there are reasons to proceed otherwise. First, there is already plenty of documentation on requirements for WHOIS (or its replacement) within ICANN and the IETF spheres; it would seem appropriate to use the already available documentation produced during years of discussion. Secondly, the reach of WHOIS is beyond that of gTLDs. RIR's and ccTLD also use the protocol. Particularly ccTLDs have their own, local policies and as a result their own set of requirements. Lastly, given this vast reach of WHOIS it seems appropriate to focus on having a robust and extensible protocol that enables multiple policy options, which would allow the relevant policy-making body for each registry/registrar to dictate which policy options to deploy.

### 3.1.2. Adoption through Consensus Policy

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<sup>8</sup> IETF Web Extensible Internet Registration Data Service working group:  
<http://datatracker.ietf.org/wg/weirds/charter/>



Historically, related efforts have been considered as topics for consensus policies in the Generic Name Supporting Organization (GNSO). Thus it seems plausible that replacement of WHOIS protocol could also be considered as a suitable topic for consensus policy development.

The GNSO has a specific policy development process (GNSO PDP) to develop and adopt consensus policies. They are outlined in the ICANN Bylaws (Annex A) and are summarized in Appendix 2 of this paper. The benefit of a GNSO PDP is that consensus policies are enforceable on all parties upon adoption by the ICANN Board and implementation by ICANN. The potential downside of the PDP approach is that it can take considerable time to complete and the outcome is uncertain.

ccTLDs' Whois policies are developed by their respective local Internet Communities (including local government, and/or ccTLD Manager according to local structure). The ICANN ccNSO Policy Development Process only applies if such policy relates to the Root-level Registry. Since this is not the case here, a ccNSO PDP on WHOIS replacement protocol is not in ICANN's policy remit; instead each ccTLD should go through its own development process for replacing the WHOIS protocol.

### **3.1.3. Adoption through Contract Negotiations**

In addition to consensus policy development, ICANN could engage with each gTLD registry to determine whether a WHOIS protocol replacement could be included as part of their Registry Agreements. Such a provision could be negotiated with registries as part of their agreement with ICANN.

Similarly, ICANN could introduce the topic as part of the Registrar Accreditation Agreement (RAA) negotiations. However, this option would not apply to ccTLD registries since the vast majority of ccTLDs do not have contract with ICANN.

The advantage of adoption through contracts is that it will be effective immediately and can be negotiated quickly. The drawback of this is option is that many contracted parties, have multi-year contracts, delaying broad implementation. For example, if this is the only option for gTLDs, it could take years to have the requirement included in all gTLD contracts. In the case of registrars, there is only one RAA for all. However, it could take years for all the registrars to be transitioned from an old RAA to the new one that would contain the required provision.

### **3.1.4. Voluntary Adoption through Promotion and Incentives**

Finally, gTLD and ccTLD registries and registrars could voluntarily adopt the new protocol. Given that the existing WHOIS protocol does not have capability to support internationalized registration data, this could serve as an additional driver for adoption. However, this is not a guaranteed outcome. One only needs to look at the economics of the current system to determine whether this might be a likely outcome. Currently:

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- 1) The users of Whois services get access to a free service, and it is possible to run high volume queries in various ways to mine the data.
- 2) There is a fee to get bulk access to Registration Data on a per registrar basis - but it is rarely used these days due to (1) above.
- 3) Registries and registrars get no revenue from Whois services - hence may have little motivation to improve it.
- 4) Competition for basic registration services at the registrar level - means there is little margin in domain name registration - and little incentive to invest in software to improve Whois services.

It has been argued that combinations of these above factors are the reasons why there has been little improvement in the subject for the last ten years. It has also been argued that misaligned incentives is the primary reason that Internet Registry Information System (IRIS), a potential replacement protocol for WHOIS, failed to gain traction in the registry and registrar world. Registrars and registries that would have had to invest resources implementing the IRIS protocol did not benefit themselves from the improved service. Thus lacking other approaches, voluntary adoption would likely be very limited.

This contrasts strongly with the success of the Extension Provisioning Protocol (EPP), where standardization of registry and registrar interfaces reduced operating cost and improved efficiency and stability for both registry and registrar systems. Thus the protocol was enthusiastically embraced even before it was standardized by the IETF.

Going forward, to increase the adoption of the new protocol, economics should be considered. Here are some possible options for consideration:

- Option 1: Currently ICANN requires both port-43 and the web-based counterpart. Going forward, ICANN could gradually deprecate port-43 WHOIS, requiring only the new protocol replacing WHOIS. This would reduce the cost for registrars / registries.
- Option 2: To reduce the cost of adoption, ICANN could establish / contribute to a project to develop open-source code and APIs for the new protocol. Registries and registrars could use these open source code and adapt for its operations.
- Option 3: With the new protocol offering a more consistent service, registries / registrars could offer new services with better rate limiting features for heavy data users. This is something that has been mentioned by members of the security community to be of interest.

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For ccTLDs, ICANN could consider encouraging the participation of ccTLDs in the development and future adoption of the replacement of the WHOIS protocol. There are various ccTLD registries that over the years have positioned themselves as technical leaders in the development and adoption of new technologies (e.g., DNSSEC, IPv6, Anycast), some of whom have already indicated interest in the IETF to volunteer working on the new protocol.

ICANN could reach out to ccTLDs via the ccNSO and the regional ccTLD organizations (e.g. CENTR, LACTLD, APTLD). Particularly, some regional ccTLD organizations have dedicated mailing list for technical and non-technical issues, which could be useful to contact. Additionally, the face-to-face meetings these organizations hold periodically could also be important to encourage participation and input.

Promoting participation of gTLD registries and registrars in the development of the protocol is also worth considering independent of the other strategies suggested to encourage adoption. For example, holding sessions at ICANN meetings and other regional or intercessional meetings that are already planned could prove beneficial.

### **3.2. Recommendations to Replace the WHOIS Protocol**

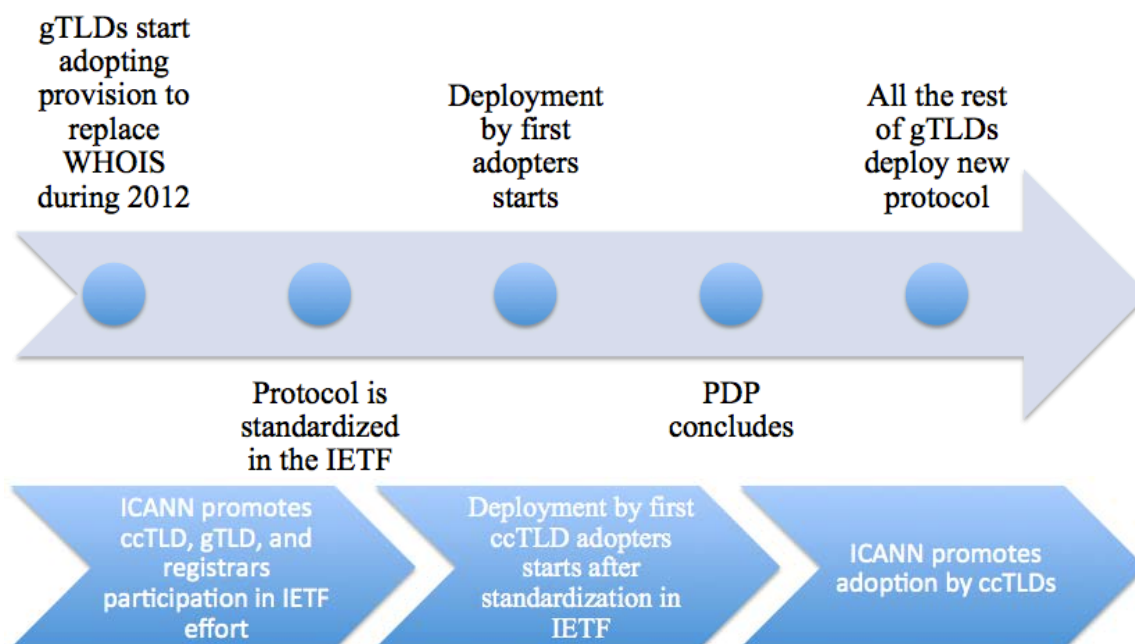
Given that that current gTLD registry and registrar agreements already require Whois services, the time associated with running a GNSO PDP, and recognizing the importance of the subject, it is recommended that ICANN take a *multipronged* approach for the adoption of the replacement for the WHOIS protocol. Specifically:

- It is recommended that ICANN promote the participation of ccTLD and gTLD registries and registrars in developing a new protocol to replace WHOIS within the IETF. We recommend taking advantage of the IETF's Web Extensible Internet Registration Data Service working group to build on and support that effort as much as possible.
- It is recommended that the Board request the GNSO to initiate a Policy Development Process regarding the replacement of the WHOIS protocol. The ICANN community should explore more the best timing for a PDP given the related IETF work. A consensus policy, if approved by the ICANN Board, would be compulsory for registries and registrars.
- Simultaneously with any policy work initiated by the GNSO Council, ICANN could negotiate the inclusion of provisions in registries and registrars' contracts, as appropriate through renewal, or other applicable processes, for the adoption of the replacement of WHOIS. By adopting a dual approach, the community would benefit from the gradual introduction of the protocol while at the same time ensuring an eventual adoption by all contracted parties.

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- It is recommended to establish/contribute to a project to develop an open-source implementation of the new protocol. Registries and registrars could use these open source code and adapt it for its needs.
- Finally, it is recommended that to promote the voluntary adoption of the WHOIS replacement protocol within ccTLDs once standardized by the IETF. Additionally, ICANN should engage with the ccTLD community to create awareness of the issues pertaining to the current WHOIS protocol, to facilitate participation in related discussions in ICANN and IETF.

Given the multipronged approach for the adoption of the replacement for WHOIS it seems useful to describe the potential timeline of the process. Below is a potential timeline for adoption for registries as an example.



## 4. Background

In this section, we list a number of past and undergoing activities that are relevant to the Board's request for a Roadmap.

### 4.1. GNSO's Whois Service Requirements Report & Whois Survey Working Group

For many years, the GNSO community has discussed a variety of concerns about Whois services in the gTLD space, and there is concern that the reliability and usefulness of the current Whois services might decrease over time. Recognizing these concerns, in May

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2009 the GNSO Council asked ICANN to compile a comprehensive set of potential technical requirements for Whois services that includes known deficiencies in the current service and “any possible requirements that may be needed to support various policy initiatives that have been suggested in the past”.

In compiling the GNSO requested requirements report, current requirements and previous policy discussions were summarized to develop the technical requirements that would be necessary to correct deficiencies and implement various policy proposals. The report is a technical inventory. It does not intend to define or suggest the policies or operational rules that should apply.

The Final Report [7] includes the following potential technical requirements: a mechanism to find authoritative servers for the service; structured queries; a well-defined schema for replies; standardized error messages; improved quality of registration data; support for internationalization; security elements; and thick vs. thin Whois.

Upon review, the GNSO Council concluded that certain assumptions and conclusions in the report should be reviewed by the GNSO community to estimate the level of agreement with each. Thus, in May 2011 the GNSO Council decided to charter a working group to develop a survey, targeted for completion late in 2012.

### **4.2. Board-initiated Internationalized Registration Data WG**

As noted above, a Board-convened GNSO - SSAC working group is studying the feasibility and suitability of introducing display specifications to deal with the internationalization of registration data. The IRD-WG recently produced a Final Report [8], highlighting the fact that the current WHOIS protocol is not able to consistently support internationalized registration data. The IRD-WG considered display standards for internationalized registration data, and different models of translating/transliterating contact names to enhance the user experience. The report contains four recommendations, including a call for evaluation of a replacement protocol [8]:

- *Recommendation 1: ICANN staff should develop, in consultation with the community, a data model for domain registration data. The data model should specify the elements of the registration data, the data flow, and a formal data schema that incorporates the standards that the working group has agreed on for internationalizing various registration data elements. This data model should also include tagging information for language/scripts.*
- *Recommendation 2: The GNSO Council and the SSAC should request a common Issue Report on translation and transliteration of contact information. The Issue Report should consider whether it is desirable to translate contact information to a single common language or transliterate contact information to a single common script. It should also consider who should bear the burden and who is in the best position to address these issues. The Issue Report should consider policy*

*questions raised in this document and should also recommend whether to start a policy development process (PDP).*

- *Recommendation 3: ICANN staff should work with the community to identify a Domain Name Registration Data (DNRD) Access Protocol that meets the needs of internationalization, including but not limited to the work products resulting from recommendations 1 and 2, and the requirements enumerated in this report.*
- *Recommendation 4: ICANN should take appropriate steps to require gTLD registries and registrars and persuade ccTLD registries and registrars to support the following standards: Domain Names - both A-label and U-label; nameserver Names- A-label, and optionally U-label; Telephone/fax- ITU-T E.123; Email-RFC 6531; Registration Status- Exact EPP status where applicable; Date and time - in UTC as specified in [RFC3339], with no offset from the zero meridian.*

### 4.3. Whois Policy Review Team

As the result of the Affirmation of Commitments [20] signed between ICANN and the U.S. Department of Commerce, the Whois Policy Review Team chartered in 2010 to “assess the extent to which the WHOIS policy is effective and its implementation meets the legitimate needs of law enforcement and promotes consumer trust.” On 11 May 2012, the Review Team published its Final Report for public comment<sup>9</sup>.

The Final Report, open for public comment until 11 July 2012, includes a few recommendations (e.g., recommendations 12 to 14) that imply the need to have a protocol that supports internationalized registration data.

### 4.4. The Need for a New Protocol

During 2010, ICANN technical staff discussed the technical limitations of the current WHOIS protocol (e.g., lack of internationalization, output format, authentication and access control). Discussion was aided by experts from other organizations such as ARIN that had previously worked in developing the Internet Registry Information Service (IRIS) [16,17,18] and RESTful Whois [2] (two potential replacement for WHOIS). On November 2010, a draft paper was released analyzing the alternatives, the Technical Evolution of the Whois Service<sup>10</sup>. Also, two technical workshops were held during the Cartagena (December 2010) and San Francisco (March 2011) ICANN meetings<sup>11</sup>. In those sessions, members of the ICANN community discussed the shortcomings of the WHOIS protocol and potential alternatives. Additionally, during the IETF meetings in

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<sup>9</sup> <http://www.icann.org/en/news/public-comment/whois-rt-final-report-11may12-en.htm>

<sup>10</sup> <http://cartagena39.icann.org/meetings/cartagena2010/presentation-tech-evolution-whois-service-15nov10-en.pdf>

<sup>11</sup> The presentation, notes and session summaries are available here: <https://community.icann.org/display/TEwhoisService/Technical+Evolution+of+WHOIS+service+wiki+page>

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Quebec (July 2011) and Taipei (November 2011), technical sessions also discussed alternatives for replacing WHOIS.

Though difficult to gauge consensus from those meetings, many technical experts expressed concern that IRIS was largely unsuitable for adoption given its complexity and use of the BEEP transport protocol [18], which is not widely used. ARIN and RIPE, the regional number resource registries for North America and Europe respectively, had previously developed independently a promising alternative: RESTful Whois (RWS). RWS leverages the HyperText Transfer Protocol (HTTP) infrastructure, including caching, referrals, authentication, version control, and secure transport (HTTPS). The programming API accommodates Unicode and numerous markup languages, supports signaling and standard error messages, and runs on top of standard Internet transport protocols. At the time, ICANN also developed a simple prototype of RESTful Whois [19] that could be used by a domain name registry.

This new REST-based protocol is still in draft form: there is currently no standard specification published by a standards body.

An IETF mailing list has been created, and there was substantial discussion at the IETF meeting in Taipei regarding forming a working group to standardize a RESTful Whois protocol. As of the beginning of February 2012, discussion seems to point to formation of a working group to build a protocol aimed primarily at number resource registries, with domain name registries a second priority. The reasoning behind the difference in priority is the sense that number resource registries are ready now to work on the standardization and their small number (5), compared to TLD registries, may facilitate quick consensus on a baseline, while TLD registries could identify in parallel those details unique to name registries (i.e., the domain name registries object specification). As of now, staff from several gTLD and ccTLD registries as well as ICANN community members from other stakeholder groups have shown interest in working on the naming aspects of the protocol.

It seems likely that after the next IETF meeting at the end of March 2012, a working group would be formally constituted. The current draft version of the proposed charter lists as a target April 2013 for finalizing the base protocol, and July 2012 to finalize the number resource registries data profile specification. The domain name registries data profile specification would then come a few months later (as it seems now).

## 5. Next Steps

As requested by the Board, ICANN is posting this Roadmap to implement SAC 051 recommendations, which incorporates input from the community. ICANN will be conducting a public session in Prague as a further means of socializing its contents.

Finally, this Roadmap will be submitted to the ICANN Board for its consideration.

## 6. Reference

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## Roadmap to Implement SAC 051

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## Appendix 1. Text of the Board Resolution

On 28 October 2011, the ICANN Board passed the following resolution [6]:

*Whereas, WHOIS service has been an important information service for the Internet community, and is part of all ICANN TLD contracts.*

*Whereas, the shortcomings of the WHOIS protocol have been known for some time.*

*Whereas, on 20 September 2011, ICANN's Security and Stability Advisory Committee (SSAC) published a report "SSAC Report on Domain Name WHOIS Terminology and Structure" (SAC 051), including specific recommendations aimed at clarity of terminology and structure with regard to discussions regarding WHOIS.*

*Resolved (2011.10.28.26), the Board hereby acknowledges the receipt of SAC 051, and thanks SSAC and other contributors for their efforts in the creation of the report.*

*Resolved (2011.10.28.27), **the Board directs staff to produce, in consultation with the community, a roadmap for the coordination of the technical and policy discussions necessary to implement the recommendations outlined in SAC 051.***  
[Emphasis added]

*Resolved (2011.10.28.28), the Board directs staff to forward SAC 051 to ICANN's Advisory Committees and Supporting Organizations for their advice, if any, with regards to implementing the SSAC recommendations, and to forward SAC 051 to the Whois Review Team.*

## Appendix 2. GNSO Policy Development Process

For GNSO, the following are rough steps for developing consensus policy (for further details, see [Annex A of the ICANN Bylaws](#) and the [PDP Manual](#)).

**Step 1: Request Issue Report.** The Board, the GNSO Council or Advisory Committees (e.g. SSAC) can request an Issue Report. The issues report should include at a minimum a) the proposed issue raised for consideration, b) the identity of the party submitting the issue, and c) how that party is affected by the issue.

**Step 2: Initiation of the PDP.** If the Board requested the Issue Report, the GNSO shall initiate a PDP within the timeframe set forth in the PDP manual. No intermediate vote is required. If the GNSO Council or an Advisory Committee requested the Issue Report, the GNSO Council may initiate a PDP by a vote of the council. Such action requires an affirmative vote of more than 33% of each House or more than 66% of one House.

**Step 3: PDP Working Group:** A Working Group is formed, which is usually open to anyone interested to join. The Working Group is tasked to address the issues outlined in its Charter and obtain the input of stakeholders, including other Supporting Organizations and Advisory Committees as part of its deliberations. The PDP WG is required to publish an Initial Report for public comment, followed by a Final Report which is submitted to the GNSO Council for its consideration. In this case, if a PDP on WHOIS replacement is initiated, it may be desirable to specifically recruit SSAC members as individual participants providing technical expertise.

**Step 4: GNSO Deliberation and Approval Process.** Once the Final Report is produced and transmitted to the GNSO Council, the Council will deliberate on the report and consider it for adoption. The GNSO could approve the Final Report and recommendations by meeting the appropriate voting thresholds as set out in [Article X, section 3.9](#) of the ICANN Bylaws.

**Step 5: Board Approval.** If the GNSO Council approves the Final Report and its recommendations, it is forwarded to the ICANN Board for approval. Any PDP Recommendations approved by a GNSO Supermajority Vote shall be adopted by the Board unless, by a vote of more than two-thirds (2/3) of the Board, the Board determines that such policy is not in the best interests of the ICANN community or ICANN. If the GNSO Council recommendation was approved by less than a GNSO Supermajority Vote, a majority vote of the Board will be sufficient to determine that such policy is not in the best interests of the ICANN community or ICANN.