



WHOIS Accuracy Reporting: Phase 1

System Validation Criteria
01 June 2015

Contents

WHOIS ARS Background	3
Project Approach	3
Validation Criteria	4
Email Addresses	5
Email Address: Stage One	5
Email Address: Stage Two	6
Telephone Numbers	8
Telephone Numbers: Stage One	8
Telephone Numbers: Stage Two	9
Postal Addresses	11
Postal Addresses: Stage One	11
Postal Addresses: Stage Two	11

WHOIS ARS Background

The WHOIS Accuracy Reporting System (ARS) project was established to perform periodic studies to assess the accuracy of the contact information in the WHOIS data in gTLDs, with the goal of identifying opportunities to improve the accuracy of this data over time. The project was established as a result of the ICANN Board's direction (8 Nov 2012) in response to recommendations by the 2012 WHOIS Review Team. Specifically, the Board directed the CEO to:

1. Proactively identify potentially inaccurate gTLD data registration information
2. Explore using automated tools and forward potentially inaccurate records to gTLD registrars for action and
3. Publicly report on the resulting actions to encourage improved accuracy.

Additional requirements have been added to the project based on ICANN Board actions in response to various pieces of GAC advice since 2012. The WHOIS ARS project aims to fulfill ICANN's commitments to the community based on these Board actions.

Project Approach

ICANN intends to produce semi-annual reports for the community regarding the accuracy of WHOIS data in gTLDs. As previously communicated, the project has been broken into phases, where each phase adds an additional layer of data validation. The phases include:



Pilot

Test process for data collection and validation related to the accuracy rates of WHOIS records



Phase 1: Syntax Validation

Is the record correctly formatted?
Report: ETA: August 2015



Phase 2: Operational Validation

Does the email not get bounced back, phone ring, mail deliverable?
Report: ETA: December 2015



Phase 3 TBD, if at all: Identity Validation

Is the contacted individual responsible for the domain?
Target: TBD – requires additional collaboration with community

1. Syntax Validation: Assess the format of the data compared to the expected format based on the contractual and/or Request for Comments (RFCs) requirements
2. Operational Validation: Assess the functionality of the contact information provided, e.g.:
 - Does the phone ring when dialed?
 - Does the email go through when sent?
 - Does the postal address exist?
3. Identity Validation: Assess the ability to contact the individual as identified in the WHOIS record. This phase may require additional input by ICANN and the community to determine the scope of these assessments, if any.

Validation Criteria

ICANN has attempted to align the validation criteria with the contractual obligations of the Registrar Accreditation Agreements (RAAs) and applicable Internet Engineering Task Force (IETF) RFCs. Currently, there are two predominant versions of the RAA in use in the gTLD space, the 2009 version (2009 RAA) and the 2013 version (2013 RAA). Each version of the RAA has requirements for presence, format and operability of specific elements of contact information for the Registrant, the Technical Contact (Tech) and the Administrative Contact (Admin) for each domain name. Each record (i.e., domain name) will be assessed against the criteria of the Registrar's agreement at the time the domain was created. ICANN will account for "grandfathered" records, which are those records (domains) that were created prior to the effective date of the 2013 RAA for that Registrar. For example:

Record Created	05 Feb 2013
Registrar's 2013 RAA Effective Date	01 Jan 2014
Validation criteria to be in testing	2009 RAA Requirements

Record Created	20 Apr 2014
Registrar's 2013 RAA Effective Date	01 Jan 2014
Validation criteria to be in testing	2013 RAA Requirements

Below you will find an overview of Phase 1 syntactical validation criteria for email addresses, telephone numbers and postal addresses to be used by the validation vendors supporting the WHOIS ARS project.

Email Addresses

As identified in the [WHOIS ARS Pilot Study](#), syntactically correct, verified email addresses do not guarantee email box existence, so while syntactically incorrect email addresses may indicate automatic failures, syntactically correct email addresses should be subject to operational verification in Phase 2.

The syntactical criteria tests for email addresses are organized into stages, stage one will verify the presence of an email address, as required by applicable RAA, and stage two will involve detailed technical testing of the address syntax.

Email Address: Stage One

In the 2009 RAA, the presence of an Admin and a Tech email address is required. The presence of a Registrant email address is optional. In the 2013 RAA, the Admin, Tech, and Registrant email addresses are each required to be present.

A "No" response for any of these tests, except for an omitted Registrant email address subject to the 2009 RAA requirements, will be considered a failure for the contact field. A missing Registrant email address subject to the 2009 RAA will be noted, but not counted against the domain/registrant. A "Yes" response will initiate Stage Two testing.

1. Is there presence of an email address?

(i.e., field is not blank)

a. Registrant email address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

b. Tech email address

- Yes – Pass
- No – Fail

c. Admin email address

- Yes – Pass
- No – Fail

Email Address: Stage Two

The Syntactical Tests in Stage Two are performed on all contact fields that attained a "Yes" from Stage One above, including the Registrant email under the 2009 RAA. Although the Registrant email under the 2009 RAA is not required, if it is present in the WHOIS output, it must be valid/accurate.

If "No" for any of these tests, it will be considered a failure for that contact field. Everything with a "Yes" will be subject to subsequent tests.

1. Does the email address only contain permissible characters?

(i.e., as provided for within the [RFC 5322](#))

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

2. Is there presence of an "@" symbol in the email address?

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

3. Is there presence of a domain component?

(i.e., the characters following the "@" symbol)

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

4. Is the domain component in a TLD, which is resolvable on the Internet?

(see IANA's Root Zone Database: <http://www.iana.org/domains/root/db>)

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

5. Is the domain component syntactically valid?

(i.e., the component following the "@" symbol meets requirements)

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

6. Is there presence of local component?

(i.e., the characters preceding the "@" symbol)

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

7. Is the local component syntactically valid?

(i.e., the component preceding the "@" symbol meets requirement)

a. Registrant, b. Tech, and c. Admin email addresses

- Yes – Pass
- No – Fail

Example:



The diagram shows the email address "customerservice@icann.org" on a dark blue background. Two orange brackets are positioned below the text. The first bracket spans from the start of "customerservice" to the end of "icann", with the label "Local Component" centered below it. The second bracket spans from the start of "org" to the end of "org", with the label "Domain Component" centered below it.

customerservice@icann.org

Local Component Domain Component

Telephone Numbers

As identified in the WHOIS ARS Pilot Study, syntactically correct, verified phone numbers do not guarantee existence or operability of the phone number and incorrect syntax does not guarantee the number is not in operation. All phone numbers will be subject to operational verification in Phase 2.

Telephone Numbers: Stage One

In the 2009 RAA, presence of Admin and Tech telephone numbers is required; presence of a Registrant telephone number is optional. In the 2013 RAA, the Admin, Tech, and Registrant telephone numbers are each required to be present.

A "No" response for any of these tests, except for an omitted Registrant telephone number subject to the 2009 RAA requirements, will be considered a failure for that contact field. A missing Registrant telephone number subject to the 2009 RAA will be noted, but not counted against the domain/registrant. A "Yes" response will initiate Stage Two testing.

1. Is there presence of a phone number?

(i.e., field is not blank)

a. Registrant phone number

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

b. Tech phone number

- Yes – Pass
- No – Fail

c. Admin phone number

- Yes – Pass
- No – Fail

Telephone Numbers: Stage Two

The Syntactical Tests in Stage Two are performed on all contact fields that attained a "Yes" from Stage One above, including the Registrant telephone under the 2009 RAA. Although the Registrant telephone under the 2009 RAA is not required, if it is present in the WHOIS output, it must be valid/accurate.

If "No" for any of these tests, it will be considered a failure for that contact field. IDENTIFIERS indicate questions that will determine if tests following the identifier are applicable, so negative answers to IDENTIFIERS do not determine pass/fail.

1. Is there presence of a country code?

(i.e., contains a discernable country code based on the first three digits)

a. Registrant, b. Tech, and c. Admin phone number

- Yes – Pass
- No – Fail

2. Is the country code syntactically valid?

(i.e., meets the requirements as specified in [RFC5733](#), +###.)

a. Registrant, b. Tech, and c. Admin phone number

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

3. Does the phone number contain at least the minimum allowed digits based on the country code?

a. Registrant, b. Tech, and c. Admin phone number

- Yes – Pass
- No – Fail

4. Does the phone number contain at most the maximum allowed digits based on the country code?

a. Registrant, b. Tech, and c. Admin phone number

- Yes – Pass
- No – Fail

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- 5. Does the phone number contain an appropriate amount of digits based on the country code?**
(e.g., the number contains 7 digits when only 6 or 8 digits are acceptable based on a country code)
- a. Registrant, b. Tech, and c. Admin phone number**
- Yes – Pass
 - No – Fail
- 6. Does the phone number only contain permissible numbers and formatting characters?**
- a. Registrant, b. Tech, and c. Admin phone number**
- Yes – Pass
 - No – Fail
- 7. IDENTIFIER – Is there presence of an extension?**
- a. Registrant, b. Tech, and c. Admin phone number**
- Yes – Proceed to additional extension validation
 - No – Move to next field
- 8. Does the extension only contain permissible numbers and formatting characters?**
- a. Registrant, b. Tech, and c. Admin phone number**
- Yes – Pass
 - No – Fail
- 9. Is the extension syntactically valid?**
(i.e., “x” to attribute the telephone extension: [RFC5733](#))
- a. Registrant, b. Tech, and c. Admin phone number**
- Yes – Pass
 - No – Fail: 2013 RAA || Pass: 2009 RAA

Postal Addresses

As identified in the WHOIS ARS Pilot Study, syntactically correct, verified postal addresses do not guarantee existence or operability of the postal address, so while syntactically incorrect postal addresses may indicate some failures, all postal addresses should be subject to operational verification in Phase 2.

Postal Addresses: Stage One

In the 2009 RAA and 2013 RAA, presence of a Registrant, Admin and a Tech postal address is required.

A "No" response for any of these tests, will be considered a failure for that contact field. A "Yes" response will initiate Stage Two testing.

1. Is there presence of a postal address?

(i.e., field is not blank)

a. Registrant, b. Tech, and c. Admin postal address

- Yes - Pass
- No – Fail

Postal Addresses: Stage Two

The Syntactical Tests in the Stage Two are performed on all contact fields that attained a "Yes" from the Stage One above.

If "No" for any of these tests, it will be considered a failure for that contact field. IDENTIFIERS indicate questions that will determine if tests following the identifier are applicable, so negative answers to IDENTIFIERS do not determine pass/fail.

1. Is there presence of a country?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

2. Is the country identifiable?

(i.e., full country name or an [ISO 3166-1 abbreviation](#))

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

3. Is the country provided in the Country field?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

4. Is the country syntactically valid?

(i.e., meets [ISO 3166-1: Alpha 2-code](#) format)

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

5. IDENTIFIER – Does the country use a postal code system?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Proceed to additional postal code validation
- No – Appropriately left blank, move to next field (i.e., Test g)

6. Is there presence of a postal code?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

7. Is the postal code in the Postal Code field?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

8. Is the Postal Code syntactically valid based on the country?

(i.e., format of postal code meets length, alpha/numeric formats of country)

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

9. IDENTIFIER – Does the country require states/provinces in its addressing system?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Proceed to additional State/Provide validation
- No – Appropriately left blank, move to next field (i.e., Test 13)

10. Is there presence of a state/province?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

11. Is the state/province in the State/Province field?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

12. Is the State/Province syntactically valid?

(i.e., full name or abbreviation depending on country addressing system)

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

13. Is there presence of a city?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

14. Is the city in the City field?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

15. Is there presence of a street?


a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail

16. Is the street in the Street field?

a. Registrant, b. Tech, and c. Admin postal address

- Yes – Pass
- No – Fail: 2013 RAA || Pass: 2009 RAA

 More information: whois.icann.org



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