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13 October 2014

All Things WHOIS: Now and in the Future

Margie Milam

Senior Director, - Strategic Initiatives

Monday 13 October 2014

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Session: All Things WHOIS

- Introduction & Background
- Latest WHOIS Statistics
- Highlights of WHOIS activities:
 - GNSO Privacy/Proxy Services PDP
 - WHOIS Conflicts with National Law
 - GAC WHOIS Concerns
 - Brief updates on:
 - Thick WHOIS Policy Implementation
 - IETF RDAP Protocol
 - Compliance Activities
 - Internationalized Registration Data
 - WHOIS Website
- Future of WHOIS - EWG Report
- Panel Discussion & Public Consultation

Introduction and Background

Margie Milam

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Background

- ICANN Board directives
 - Implement the WHOIS Review Team recommended improvements
 - Redefine the purpose and provision of gTLD registration data
- Expert Working Group (EWG) formed to assess the need for Next Generation Registration Directory Service (RDS) and identify a replacement for WHOIS

Latest WHOIS Statistics

Steven Pedlow

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WHOIS Pilot Accuracy Report



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WHOIS Accuracy Reporting System

- Proactively identify inaccurate WHOIS records
- Explore using automated tools
- Forward potentially inaccurate records to registrars for action
- Publicly report on the resulting actions

NORC Pilot Report – WHOIS Accuracy

- Collaboration with: UPU, DigiCert, StrikeIron to examine (registrant fields only):
 - ✓ email, telephone numbers and postal addresses
 - ✓ syntactic and operational validation

Findings include comparisons of accuracy rates from different perspectives, including:

- Registrars under 2009 RAA vs 2013 RAA
- New gTLDs vs. prior gTLDs
- Geographic Regions

Sample Design

- 100,000 total domains, oversampling new gTLDs
- New gTLDs (1.4 percent of domains, 25 percent of sample)
 - Minimum of 10 (or all if less than 10) from EVERY gTLD
 - Total of 25,000 domains selected from 318 new gTLDs
- Prior gTLDs (98.6 percent, 75 percent of sample)
 - Minimum of 30 (or all if less than 30) from EVERY gTLD
 - Total of 75,000 domains selected from 20 prior gTLDs
- Each gTLD is a separate systematic sample
 - Every k^{th} record selected starting from the i^{th} record

Sample Design (cont.)

Region	Full Sample	10,000	Selection Rate	1,000	Selection Rate
Africa (AF)	617	617	100.0%	100	16.2%
Latin Amer./Carib. (LAC)	3,380	1,000	29.6%	150	15.0%
Asia/Aust./Pac. (AP)	20,176	1,784	8.9%	160	8.9%
Europe (EUR)	23,417	2,071	8.9%	186	8.9%
North America (NA)	50,768	4,490	8.9%	401	8.9%
Missing (.)	463	38	8.9%	3	8.9%
TOTAL/OVERALL	98,821	10,000	10.1%	1,000	10.0%

- Two subsamples needed; systematic sorting used

Scope of Pilot

WHOIS Records randomly selected

100,000 records from zone files

Address Validation

Universal Postal Union
Syntactical (10,000 records)
Operational (1,000 records)

Phone Validation

DigiCert
Syntactical (10,000 records)
Operational (1,000 records)

Email Validation

Strikelron
Syntactical & Operational
Approximately 100,000 records

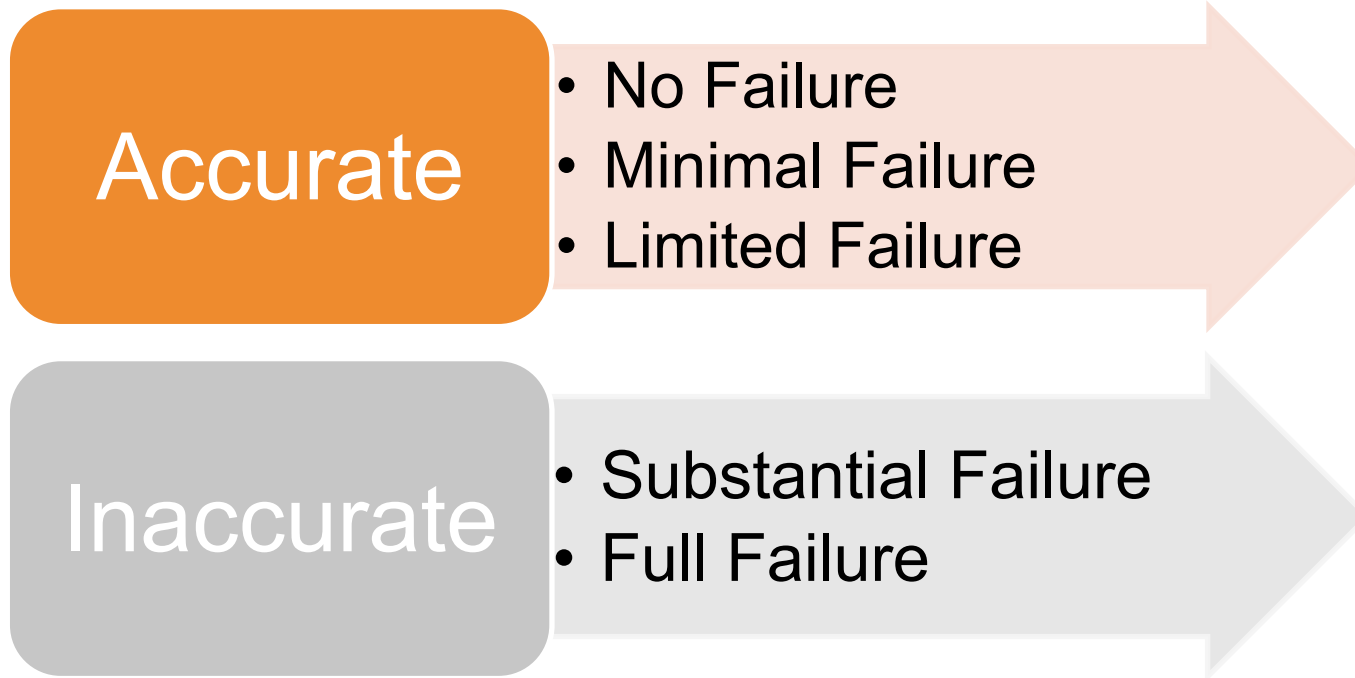
ARS Report Requirements

- Accuracy rates: new gTLDs and prior gTLDs
- Accuracy rates: registrars under 2013 RAA versus prior versions
- Compliance rates: validation and verification of certain WHOIS Contact Data requirements, as listed in the WHOIS Accuracy Program Specification to the RAA
- Accuracy rates for registrars, registries and registrants located in the five ICANN Geographic Regions
- Ranking of each ICANN accredited registrar and gTLD registry
- Trend analysis: historical data & improvements/decline in accuracy rates

Preliminary Findings

- Registrars under 2013 RAA have higher Operational accuracy on email addresses, but lower Syntactical accuracy on postal addresses
- New gTLDs and Prior gTLDs perform substantially similar – some differences are statistically significant, but slight
- Geographic Regions:
 - Europe and Latin America/Caribbean have **highest accuracy ratings** for postal addresses, North America for Syntactical telephone numbers
 - Africa **lowest accuracy ratings** for Syntactical telephone/postal, Asia/Pacific for Operational email

Accuracy Rating Classifications



Accuracy Percentages Across RAAs New vs. Prior gTLDs

	All gTLDs	2009 RAA	2013 RAA	Prior gTLDs	New gTLDs
<i>Syntactical:</i>					
Email	99.9	99.9	99.9	99.9	99.9
Telephone	88.7	90.1	89.9	88.0	90.9
Postal	81.2	85.9	81.0	81.8	79.1
<i>Operational:</i>					
Email	89.2	81.7	89.8	88.9	90.2
Telephone*	72.4	79.6	73.5	74.3	66.5
Postal*	82.4	85.7	82.4	82.4	82.4

* Small Sample Size (1,000)

Accuracy Percentages - ICANN Geographic Regions

	All Regions	Africa	Asia Australia Pacific	Europe	Latin America Caribbean	North America
<i>Syntactical:</i>						
Email	99.9	99.5	99.9	99.9	99.9	99.9
Telephone	88.7	67.4	82.6	85.9	88.9	96.1
Postal	81.2	67.4	74.9	91.2	92.0	79.2
<i>Operational:</i>						
Email	89.2	90.9	83.2	90.0	89.8	91.1
Telephone*	72.4	52.0	57.5	65.6	76.7	85.5
Postal*	82.4	69.0	71.9	93.6	92.0	81.8

* Small Sample Size (1,000)

DRAFT RESULTS



Sample Sizes for Ten Largest gTLDs

TLD	100,000	10,000	1,000
.com	44,399	4,518	451
.net	12,539	1,261	129
.org	8,726	883	89
.info	4,725	456	44
.xyz (New)	3,282	293	26
.biz	2,215	223	24
.berlin (New)	1,504	134	12
.club (New)	1,162	141	17
.guru (New)	805	82	10
.mobi	781	84	9

Email Accuracy for Ten Largest gTLDs

TLD	Syntactical
gTLD A	100.00
gTLD B	100.00
gTLD C	100.00
gTLD D	100.00
gTLD E	99.99
gTLD F	99.95
gTLD G	99.94
gTLD H	99.92
gTLD I	99.89
gTLD J	99.88

TLD	Operational
gTLD A	91.62
gTLD D	96.53
gTLD B	93.63
gTLD J	92.54
gTLD F	91.46
gTLD I	91.19
gTLD E	90.88
gTLD C	90.65
gTLD H	88.93
gTLD G	88.02

Sample Sizes for Ten Largest Registrars

TLD	100,000	10,000	1,000
GoDaddy.com, LLC	28,431	2,761	263
eNom, Inc.	7,243	1,055	134
Network Solutions, LLC	6,720	628	56
Tucows Domains Inc.	4,511	458	44
1&1 Internet AG	4,362	394	38
GMO Internet, Inc.	2,444	211	20
PDR Ltd.	2,331	270	30
Wild West Domains, LLC	1,887	185	18
PSI-USA, Inc.	1,633	146	14
united-domains AG	1,400	154	17

Email Accuracy for Ten Largest Registrars

Registrar	Syntactical
Registrar A	100.00
Registrar B	100.00
Registrar C	100.00
Registrar D	100.00
Registrar E	100.00
Registrar F	99.97
Registrar G	99.95
Registrar H	99.95
Registrar I	99.93
Registrar J	99.92

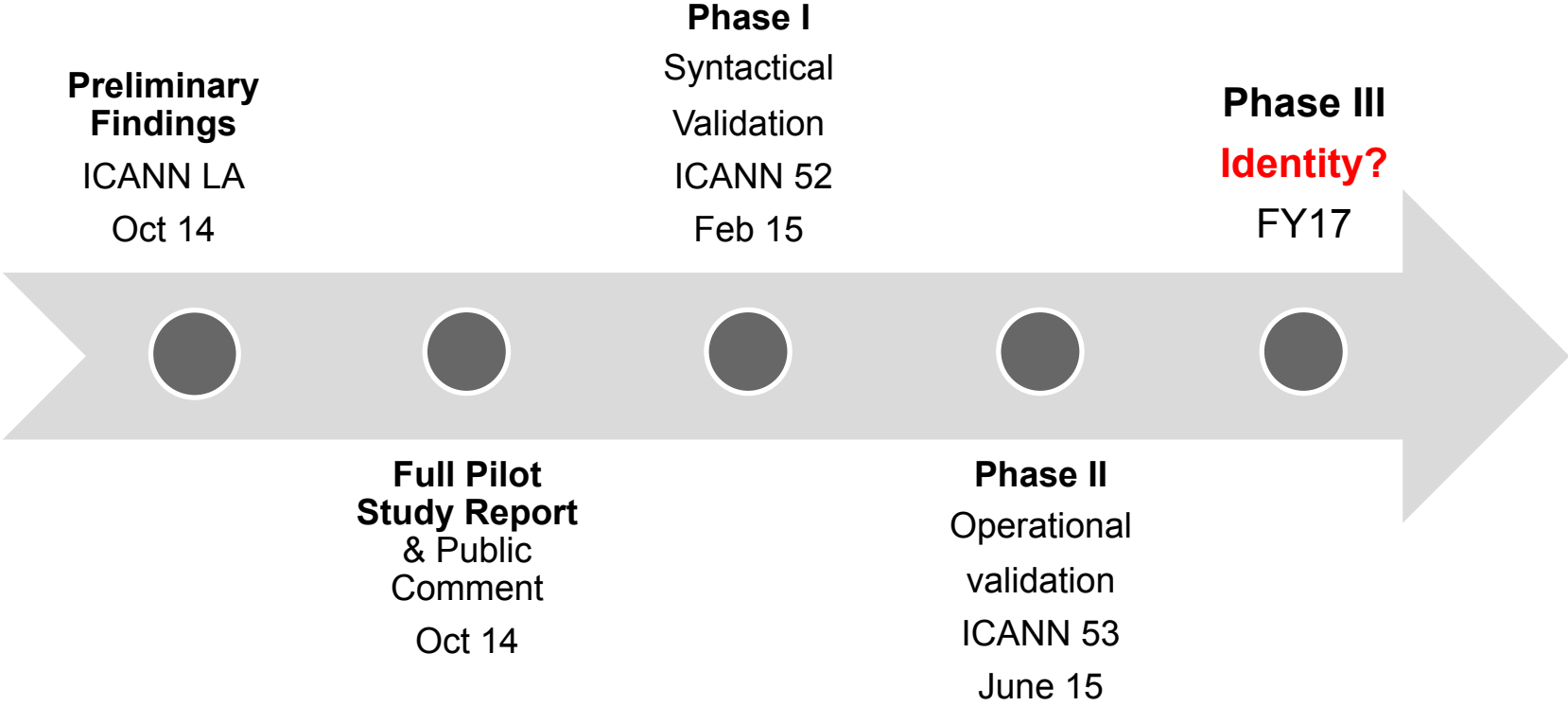
TLD	Operational
Registrar F	94.6
Registrar D	94.4
Registrar I	94.0
Registrar A	94.0
Registrar E	93.9
Registrar C	92.6
Registrar G	92.6
Registrar H	92.5
Registrar B	92.3
Registrar J	89.6

Study Implications & Lessons Learned

- Definitions- careful examination needed
 - **Example:** alternative “syntactical” definitions produce different results

Should it include a check of the validity of domain name or just conformity to RFC requirements?
- Methodology for producing an overall score across perspectives
- Exploring Identity Validation
 - Complexity & Cost Concerns
 - What degree of validation is feasible/acceptable?
- Sample Sizes & Confidence Levels

Milestones & Timelines



Additional Information and Next Steps

- Preliminary Findings Paper posted [here](#)
- Full Study Report to be Published after LA
- Public Comment to be Open until **31 Dec 2014**, seeking feedback on
Methodology, Approach & Proposed Design of ARS
- Volunteer for Registrar ARS Working Group until 1 Nov by sending email to:

SI-Volunteer@icann.org

Highlights of WHOIS Activities

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PRIVACY & PROXY SERVICES ACCREDITATION ISSUES (PPSAI) POLICY DEVELOPMENT PROCESS (PDP)

Don Blumenthal

PDP Working Group Chair

Board-initiated GNSO PDP

- Develop policy recommendations to guide ICANN's planned Privacy & Proxy Services Accreditation Program
 - *WG chartered by GNSO Council in October 2013 following Board approval of 2013 Registrar Accreditation Agreement (RAA)*
 - *2013 RAA contains temporary specification on P/P services (expiring January 1, 2017)*
- WG on track to publish Initial Report for public comment in early 2015

Issues & Preliminary Conclusions

- Multiple issues categorized as **General, Registration, Maintenance, Contact Points, Relay, Reveal, Termination**
- Preliminary conclusions agreed on Registration, Maintenance, Contact Points, Relay (partial – on requirements to forward electronic communications)

WG currently focusing on **Reveal**:

- Recommended definitions: “Publication” distinct from “Disclosure”
- Standards may differ for different types of requestors (e.g. law enforcement, IP owners, anti-abuse queries, consumer requests)

Further Information

- WG face-to-face meeting/community feedback session on **Wednesday 15 October, 0815-0945, Beverly Hills Room:**

<http://la51.icann.org/en/schedule/wed-ppsai>

- WG Workspace:

<https://community.icann.org/x/9iCfAg>

- The 2013 RAA including the temporary Privacy & Proxy Specification:

<http://www.icann.org/en/resources/registrars/raa/approved-with-specs-27jun13-en.htm#raa>

WHOIS Conflicts with National Law

Jamie Hedlund, ICANN

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WHOIS Conflicts with National Law

- What is it? How does it differ from Data Retention Waivers?
- Why was it developed?
- What's going on now?
- Need more information?

<https://www.icann.org/public-comments/whois-conflicts-procedure-2014-05-22-en>

GAC WHOIS Concerns

Heather Dryden, GAC Chair

Brief Updates

- Thick WHOIS
- IETF RDAP Protocol
- Compliance Activities
- Internationalized Registration Data
- WHOIS Website

Thick WHOIS Policy Implementation

Francisco Arias, ICANN

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Thick WHOIS - Status

- Board adopted the GNSO Policy Recommendations on 7 Feb. 2014
- Two expected outcomes
 1. Transition from thin to thick WHOIS for .COM, .NET, .JOBS
 2. Consistent labeling and display of WHOIS output as per specification 3 of the 2013 RAA for all gTLDs
- ICANN Staff currently working with the IRT
 - Implementation plan being developed
 - Conclusions of the legal review of issues associated with the transition from thin to thick WHOIS expected in November 2014

Thick WHOIS – Next Step

- Implementation work
 - Finalize and deploy a community outreach plan
 - Discuss implementation details with affected parties
- Community Involvement
 - All gTLD registries and registrars should be aware
 - Interested parties may get involved in the IRT
 - Thick WHOIS Implementation Working Session at ICANN51: Thursday 16 Oct. at 8:30 in Constellation

IETF RDAP Protocol

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What is RDAP

- A protocol to replace (port-43) WHOIS
- Benefits:
 - Internationalization
 - Standardized query, response, and error messages
 - Extensibility
 - Distributed sources (redirection)
 - Differentiated access
 - Searchability

History on Replacing the WHOIS Protocol

- SAC 051 Advisory (19 Sep 2011)
 - *The ICANN community should evaluate and adopt a replacement domain name registration data access protocol*
- Board resolution adopting SAC 051 (28 October 2011)
- Roadmap to Implement SAC 051 (4 June 2012)
- RDAP Community development within IETF WG since 2012
- Contractual provisions in 2012 RA & 2013 RAA
- RDAP RFCs expected in the next few months
- Potential synergies w/thick WHOIS Policy implementation?

Compliance Activities

Owen Smigelski, ICANN

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Contractual Compliance Update

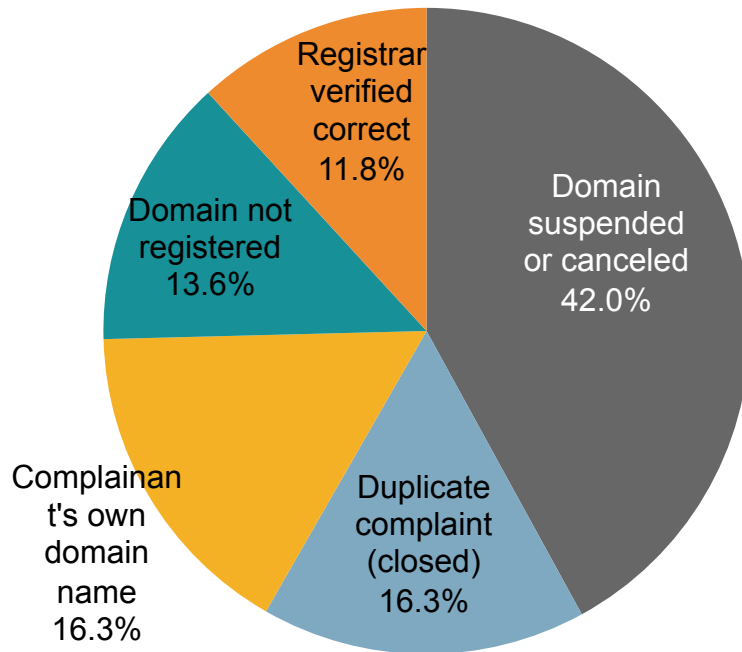
- Additional WHOIS requirements with the 2013 RAA related WHOIS Accuracy Verification and Validation, WHOIS Format and SLA
- Implemented WHOIS Closure Codes for community reporting
- Implemented a WHOIS quality process to periodically confirm compliance for suspended domains related to WHOIS Inaccuracy complaints
- Reduced WHOIS processing time by 5 days due to additional system validation
- Publishing the Monthly Compliance Dashboard
<https://features.icann.org/compliance>

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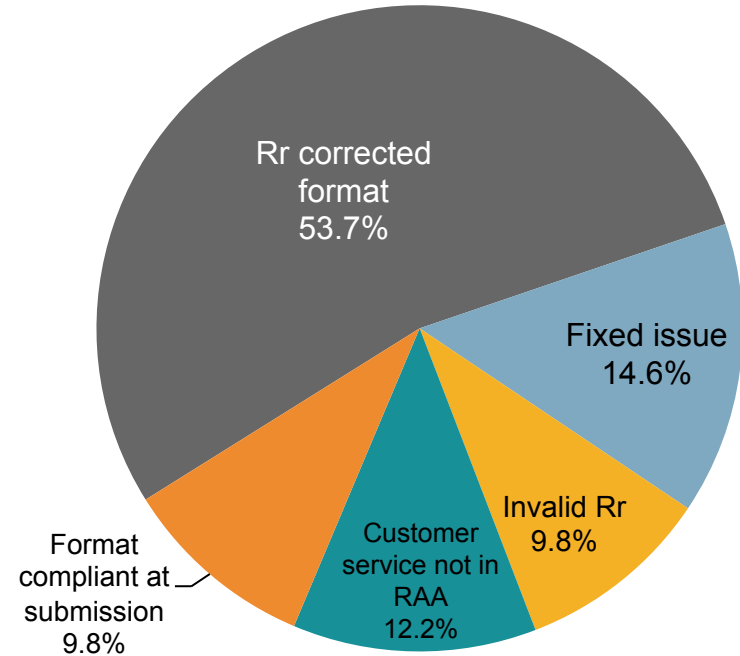


Top 5 Closure Reasons: Jun 2014 – Sep 2014

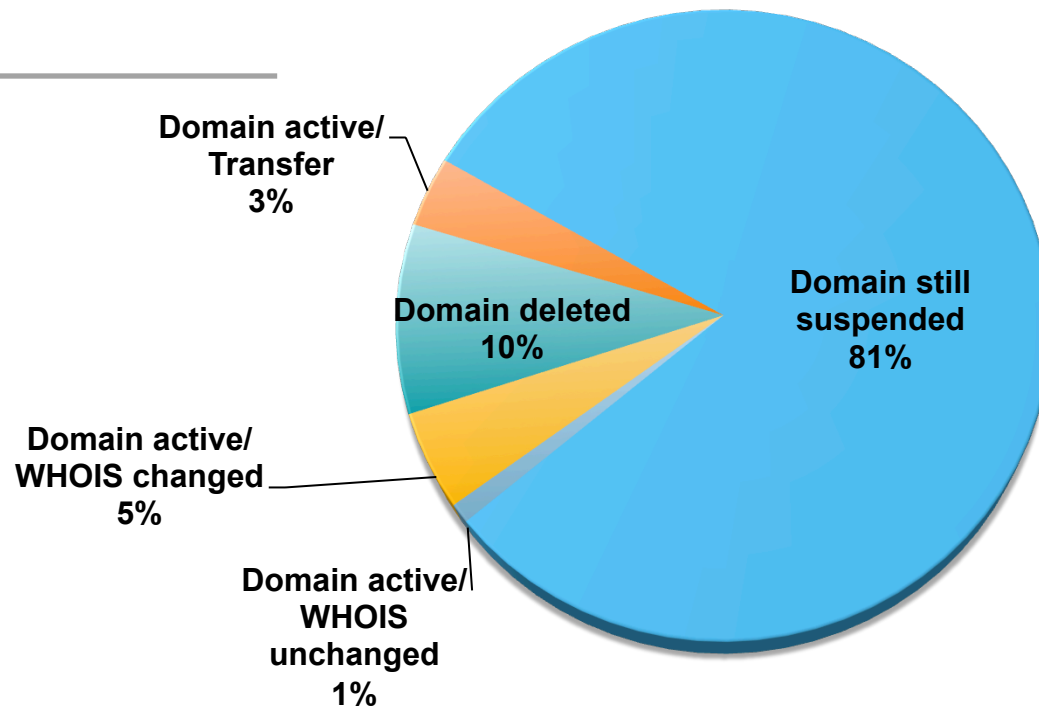
Whois Inaccuracy: Closure Reasons



Whois Format: Closure Reasons

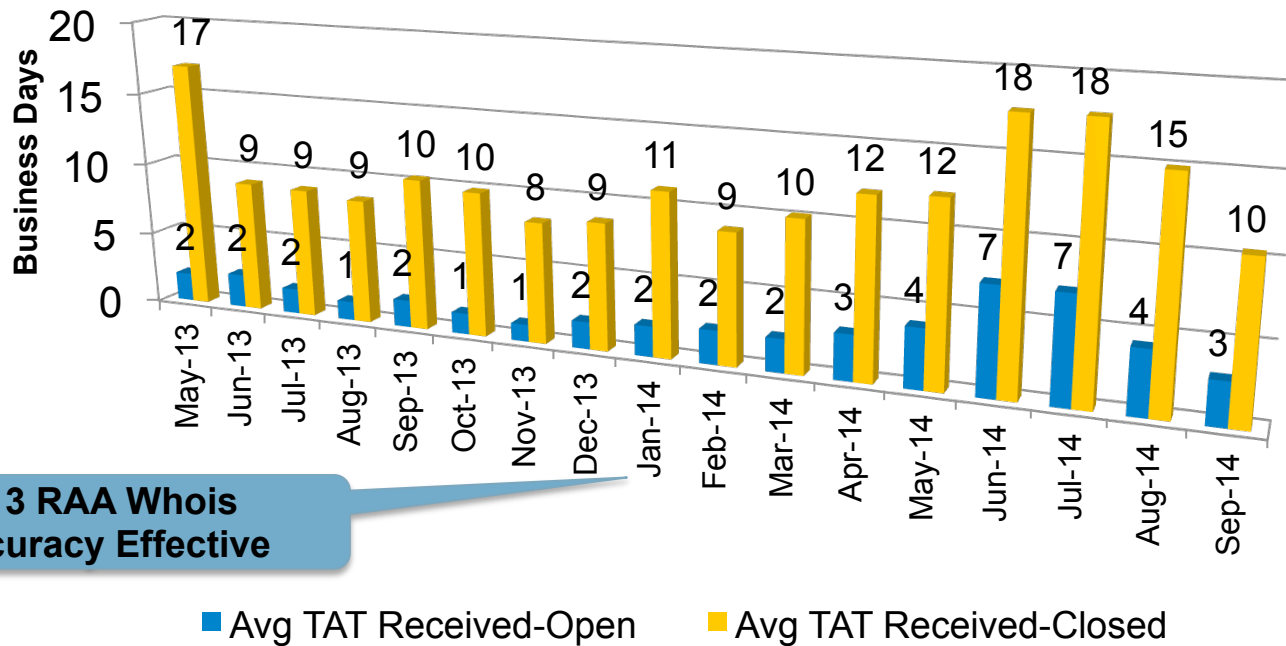


WHOIS Inaccuracy – Quality Review Results



- Reviewed WHOIS Inaccuracy complaints that were closed due to Domain Suspended
- Out of 1,296 complaints sampled found 81% remained suspended

WHOIS Average Turn Around Time

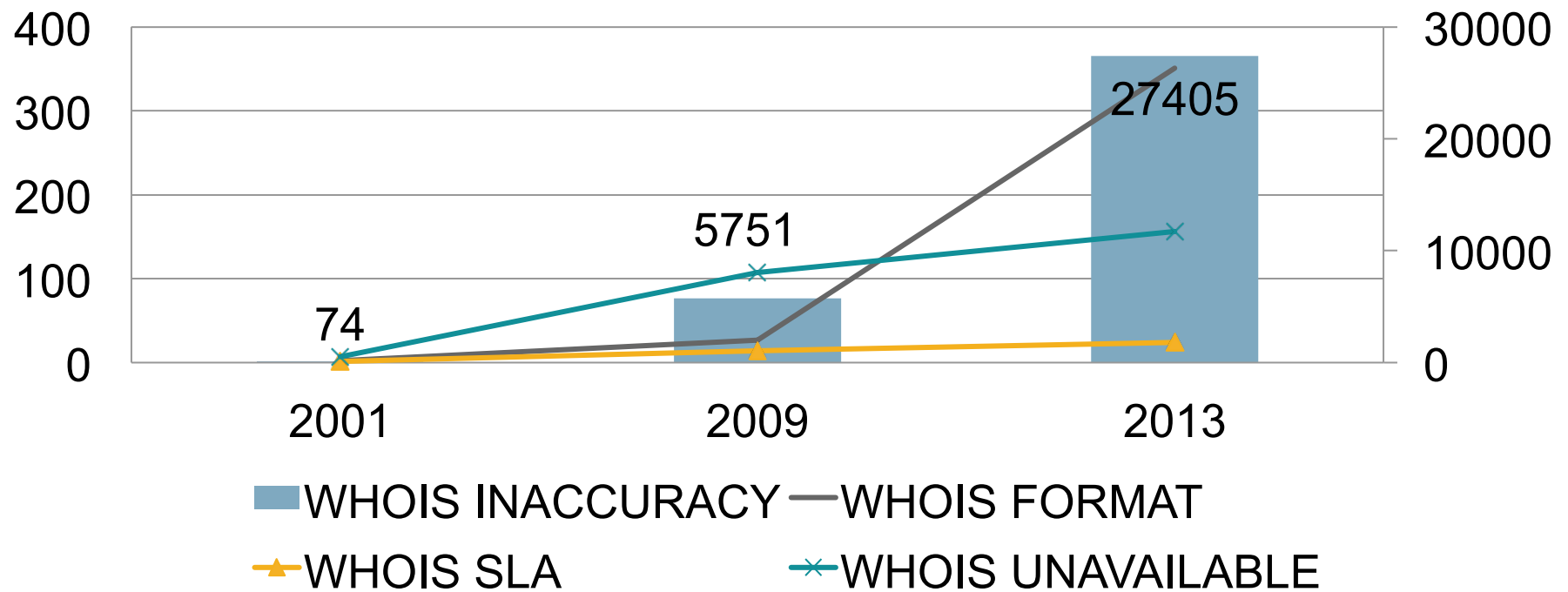


Average Business Days Turn Around Time

- Complaint Received by ICANN to Submitted to Registrar
- Complaint Received by ICANN to Closed

WHOIS Inaccuracy Impact of 2013 RAA

Registrar Complaints by Contract Year May 2013 – Sep 2014



Internationalized Registration Data

Steve Sheng, ICANN

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Activities in this Area

- GNSO PDP on Translation and Transliteration of Contact Information
- WHOIS Review Team Internationalized Registration Data Expert Working Group
- Study to Evaluate Solutions for the Submission and Display of Internationalized Contact Data

GNSO PDP on Translation and Transliteration of Contact Information

- Charted to answer two questions:
 1. Whether it is desirable to translate contact information to a single common language or transliterate contact information to a single common script.
 2. Who should decide who should bear the burden translating contact information to a single common language or transliterating contact information to a single common script.
- In addition, the Group also considers related questions such as:
 - What are the benefits of transformation (translation or transliteration) in light of potential costs?
 - Should transformation be mandatory in all gTLDs?
 - Should transformation be mandatory for all registrants or only those based in certain countries and/or using specific non-ASCII scripts?

Recent Developments



- Input from SO/ACs and SG/Cs has been received and discussed.
- The Group has discussed a straw man proposal and is currently in the process of drafting its Initial Report, to be published shortly after ICANN51.
- Publication of Final Report for ICANN52 or shortly after.

WHOIS Review Team IRD Expert Working Group

- Chartered to:
 - Develop requirements for internationalized registration data
 - Produce data model that matches the requirement
- Recent Developments
 - WG expected to release final report shortly after ICANN51



IRD Solutions Study

Chartered to documents current practices and transformation possibilities for internationalized registration data

1. Look into practices of handling IRD
 - Electronic merchants and online services
 - Registries and registrars in geographies using local languages
 - Protocols on submission, storage, transmission and display
2. Assess accuracy of transforming IRD

Recent Developments

- Final Report will be published in 2014
- Key findings:
 - No responding registrar or registry is currently transforming registrant data;
 - Provisioning and querying protocols are lacking either support or deployment for internationalized registration data; and
 - None of the tools tested is providing a high level of accuracy and consistency in its transformation of internationalized registration data.



WHOIS Website

Margie Milam, ICANN

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Other Implementation Activities



WHOIS Website - whois.icann.org

- Single Look-Up Portal for All gTLDs
- WHOIS Primer: <http://whois.icann.org/en/primer>
- Available in multiple languages
- Knowledge Center contains the latest WHOIS related documents
- **Developing**- interactive accuracy statistics



WHO Registered That?

ICANN's WHOIS Lookup gives you the ability to lookup any generic domains, such as "icann.org" to find out the registered domain owner. Help us continue to improve WHOIS and share your [thoughts!](#)

Lookup

[Policies](#)

[Get Involved](#)

[WHOIS Complaints](#)

Future of WHOIS - EWG Report

Susan Kawaguchi, EWG

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About the EWG

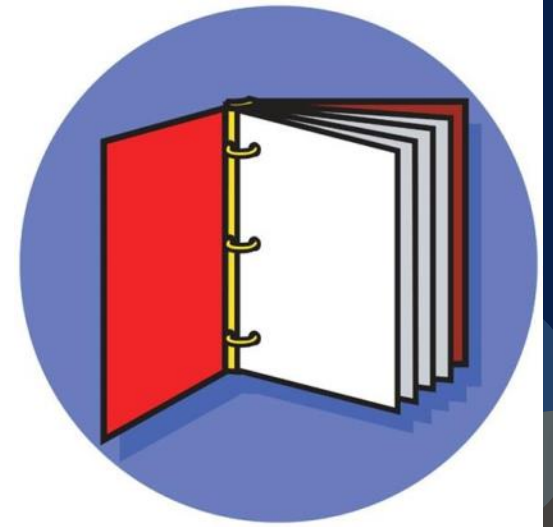
- Formed to break decade-long impasse
 - Members brought diverse expertise and experiences to bear on this complex problem
 - Discussed issues frankly, participated individually, and sought compromises
- Working together to find an answer to the ICANN Board's question

Is there an alternative to today's WHOIS to better serve the global Internet community?



EWG's Final Report

- Details a proposed next-generation Registration Directory Service (RDS)
- Strikes a balance between
 - Accuracy
 - Access
 - Privacy
 - Accountability
- Collects, validates and discloses gTLD data for permissible purposes only
- Safeguarded through a new paradigm of purpose-driven gated access



Next Steps

- ICANN Board is now considering how to use EWG's Final Report as a foundation for Board-requested GNSO Policy Development Process (PDP)
- Next Step: Collaboration Group to explore how to best structure PDP(s) for success
- All interested parties are invited to
 - Contribute ideas about PDP structure: input-to-ewg@icann.org
 - Provide feedback on RDS as part of PDP(s)



gTLD Registration Services Policy Development Process

Nov 2012	Board	Direct preparation of an Issue Report
Nov 2012	Board	Launch the EWG
Mar 2013	Staff	Preliminary Issue Report
Mar-Apr 2013	Community	⇒ Public Comment Forum
Jun 2013	EWG	EWG Initial Report
Jun-Aug 2013	Community	⇒ Public Comment Forum & Consultations
Nov 2013	EWG	EWG Update Report
Dec-Feb 2014	Community	⇒ Public Comment Forum & Consultations
Jun 2014	EWG	EWG Final Report
Oct 2014	GNSO Council +Board	Informal collaboration group to discuss next steps
	Staff	Final Issue Report
	GNSO Council	Develop Charter for PDP Working Group
	GNSO Council	Adopt Charter (start of next phase)
	Community	⇒ Provide input at early stage of PDP

Orange = Mandatory element of GNSO PDP

To learn more about the
proposed RDS...

Download EWG's Final Report: <https://community.icann.org/pages/viewpage.action?pagelId=48343061>

**Read EWG's RDS FAQs:
<https://community.icann.org/display/WG/EWG+FAQs>**

**Watch EWG's RDS Videos:
<https://community.icann.org/display/WG/EWG+Multimedia+Frequently+Asked+Questions>**



Panel Discussion and Public Consultation

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Questions & Answers



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