

The image is a promotional graphic for the ICANN 60 Annual General meeting. It features a background photograph of a city at dusk or dawn, with several tall, modern skyscrapers on the left and a large, ornate archway on the right. In the foreground, there are colorful flower beds and a paved walkway. A white rectangular box with a thin border is overlaid on the right side of the image, containing the event's title and dates in white text. The text is arranged in three lines: 'ICANN' in a large, bold, sans-serif font, 'ANNUAL GENERAL' in a smaller, bold, sans-serif font, and '60' in a very large, bold, sans-serif font. Below this, 'ABU DHABI' is written in a bold, sans-serif font, and '28 October-3 November 2017' is written in a smaller, sans-serif font.

**ICANN**  
**ANNUAL GENERAL**

**60**

**ABU DHABI**

28 October-3 November 2017

# Registrar Data Escrow Agent Reporting

## Automation of Registrar Data Escrow Notifications

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# Agenda

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# Motivation

# Registrar Data Escrow Reporting Issues



Manual tracking of issues for remediation



Ad-hoc deposit verification results reporting



Communication delays



Lack of clarity in deposit verification issues



Accountability of Data Escrow reporting issues



Low visibility of Registrar Data Escrow Status

# Registry Data Escrow and RRI

# Registry Data Escrow

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- ⦿ Registry Operators have a similar Data Escrow model:
  - Daily DEA notifications.
  - Daily Registry notifications.
  
- ⦿ Automated notifications facilitate the process.
  - Standard notification contents.
  - Registries can monitor Data Escrow notifications through RRI.
  
- ⦿ Re-use the Registry Data Escrow specification as much as possible, and leverage the use of RRI.

# What is RRI?

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- ⊙ ICANN's **Registration Reporting Interfaces**.
  - RESTful API.
  - HTTP Basic Authentication.
  - Registry Data Escrow notifications.
  - Registry monthly reporting.
- ⊙ Currently used by Registry Operators and Data Escrow Agents.
- ⊙ Public documentation available at:
  - <https://tools.ietf.org/html/draft-lozano-icann-registry-interfaces>



# Proposed Functionality

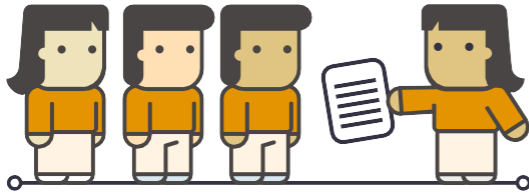
# Proposed Functionality

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- ⊙ Support to receive data escrow notifications in RRI from:
  - Registrar Data Escrow Agents.\*
  - Registrars. **[Optional]**
  
- ⊙ Allow monitoring by Registrars of:
  - Registrar's Data Escrow status with ICANN.
  - Data Escrow Agent deposit validation results.

# Data Escrow Agent Notifications

## Send Deposit



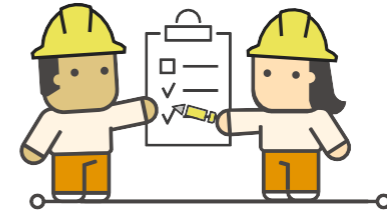
1

Registrar sends escrow deposit to DEA.

- DEA validates the deposit and works with the Registrar to address any problems found.

2

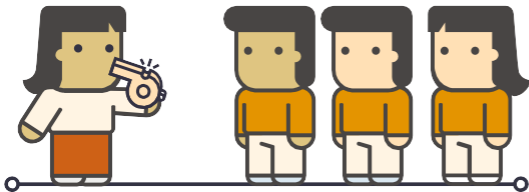
## Deposit Verification



3

- DEA submits a **notification** to ICANN through RRI for each deposit that has been received and verified.

## Notify Results



If a scheduled deposit is not received from a Registrar, the DEA submits the corresponding **notification** using RRI.

# Data Escrow Agent Notification Contents

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- ⦿ Data Escrow deposit details:
  - Deposit date.
  - Date received by DEA.
  - Date of verification by DEA.
  - Date of last successful full deposit.
  - Registrar domain counts per TLD.
  
- ⦿ Deposit verification details:
  - Verification result.
  - Cause(s) of verification failure (if any).

# Data Escrow Deposit Verification

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- ⦿ Verify compliance with the Registrar Data Escrow Specification:
  - <https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf>
  
- ⦿ Standard error codes to report deposit verification problems:
  - File processing errors.
  - File hash validation errors.
  - Invalid format of contents.
  - Invalid syntax of contents.
  - Missing mandatory data.

# Deposit Verification Results

## ⦿ Sample verification errors:

*\*Full list included in the proposed **draft-icann-registrar-interfaces** specification.*

Result Code	Message
2001	No corresponding hash file found for deposit file.
2002	Hash does not match corresponding deposit file.
2003	Invalid hash file format.
2101	Unrecognized data escrow deposit file CSV header.
2102	Escrow Record structure does not conform with CSV header definition.
2103	Escrow Record found missing data in required field(s).
2104	Invalid domain name syntax in Escrow Record.
2105	Invalid email syntax in Escrow Record.
2106	Invalid hostname syntax in Escrow Record.
2109	Duplicate domain or handle Escrow Record found in deposit.
2110	Handle reference by Escrow Record not found.
2201	"Full" data escrow deposit expected but received "Differential" instead.
2202	Data Escrow deposit date is in the future.

# Optional Registrar Data Escrow Reporting

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- ⦿ Support for Registrars to [submit reports](#) of data escrow deposits delivered to their DEA.
- ⦿ Registrar reports allow verification of the deposit's details against the [DEA's notification](#).
- ⦿ Registrars that submit reports to RRI will have visibility of their data escrow [status with ICANN](#).

# Registrar Status Monitoring

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- ⦿ A Registrar's reporting status may be verified at any moment using RRI.
- ⦿ Data Escrow reporting issues for the Registrar will be listed in JSON format.
  - Allows for automated parsing.



# Registrar Status Monitoring



## Registrar Details

A Registrar may verify their Data Escrow Deposit schedule.



## Registrar Reporting Status

Registrars may opt to enable Data Escrow reporting and track outstanding issues.



## DEA Reporting Status

Data Escrow status based on Data Escrow Agent Notifications.

```
{
  "registrar": {
    "ianald": "1",
    "creationDate": "2017-10-01T12:22:14.148Z",
    "depositSchedule": "Weekly",
    "lastFullDate": "2017-09-10"
  },
  "reports": [ {
    "type": "Registrar",
    "enabled": false,
    "status": "ok"
  }, {
    "type": "Dea",
    "enabled": true,
    "status": "ok"
  } ],
  "timestamp": "2017-10-13T02:22:14.148Z"
}
```

# Registrar Status Monitoring



## Registrar Details

Deposit schedules include:  
“Daily”, “Weekly” or “None”.



## Registrar Reporting Status

Missing Registrar reports being tracked.



## DEA Reporting Status

Reported data escrow issues and missing DEA notifications are listed accordingly.

```
{
  "registrar": {
    "ianald": "1",
    "creationDate": "2017-10-01T12:22:14.148Z",
    "depositSchedule": "Daily",
    "lastFullDate": "2017-08-10"
  },
  "reports": [ {
    "type": "Registrar",
    "enabled": true,
    "status": "unsatisfactory",
    "issues": {
      "2017-10-15": "No_Report_Received",
      "2017-10-16": "No_Report_Received"
    }
  }, {
    "type": "Dea",
    "enabled": true,
    "status": "unsatisfactory",
    "issues": {
      "2017-10-14": "Invalid_Deposit_Diff",
      "2017-10-15": "Missing_Deposit_Full",
      "2017-10-16": "Missing_Deposit_Diff",
      "2017-10-17": "No_Report_Received"
    }
  } ],
  "timestamp": "2017-10-18T02:22:14.148Z"
}
```

# Verifying DEA Data Escrow Notifications

- ⦿ A Registrar may verify the DEA Data Escrow notifications received for a specific date.
- ⦿ DEA's "Deposit Verification Failed Notification" (DVFN) includes standard error codes.

2 domain escrow records have invalid domain name syntax.

Contact handle in 1 domain escrow record is missing in the deposit.

```
...  
  "status" : "DVFN",  
  "results" : [ {  
    "code" : 2104,  
    "domainCount" : 2,  
    "msg" : "Invalid domain name syntax in Escrow Record."  
  }, {  
    "code" : 2110,  
    "domainCount" : 1,  
    "msg" : "Handle reference by Escrow Record not found."  
  } ],  
  ...
```

# Benefits

# Goals



## Real Time Monitoring

Support for automation;  
Detect and remediate issues  
in a timely manner.



## Improve Feedback

Standard notifications and  
error codes.



## Traceability

Access to DEA notification  
contents reported to  
ICANN.



## Accountability

Differentiate between  
verification and reporting  
issues.

# Requirements

# Technical Specifications

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- ⦿ New draft specification for Registrar Data Escrow Reporting
  - **draft-icann-registrar-interfaces**
- ⦿ Updates to Data Escrow specifications:
  - **draft-arias-noguchi-dnrd-objects-mapping**
  - **draft-lozano-icann-registry-interfaces**
    - ⚠ **Registry Data Escrow remains unaffected.**

# Who Is Affected?

## DEAs\*

- ⦿ Must support the new and updated specifications.
- ⦿ Reporting process through RRI.

## Registrars

- ⦿ No changes in the required deposit format.
- ⦿ Registrar access to RRI is OPTIONAL.
- ⦿ ... but Registrars interested in using RRI would need to provide data escrow reports.

## Registries

- ⦿ No changes!



# Requesting Access to RRI

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- ⊙ RRI Functionality is currently under development.
  - Implementation timeline and more information soon.
  - ICANN will notify Registrars once access is available.
  
- ⊙ Registrars interested in using RRI once implemented will be required to provide the following:
  - User password.
  - List of IP addresses to be whitelisted.

# Applicability

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- ⦿ Upcoming Data Escrow Agent(s) selected in the ongoing RFP.
- ⦿ ICANN's current designated Data Escrow Agent: Iron Mountain
- ⦿ Other approved Registrar Data Escrow Agents.
  - <https://www.icann.org/resources/pages/registrar-data-escrow-2015-12-01-en>

# Feedback

# Suggestions Are Welcome



Please provide your feedback and join the discussion at:

<https://mm.icann.org/listinfo/gtld-tech>



# Engage with ICANN



## Thank You and Questions

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