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Registrar Data Escrow Agent Reporting

Automation of Registrar Data Escrow Notifications

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Agenda

1. Motivation
2. Registry Data Escrow and RRI
3. Proposed Functionality
4. Benefits
5. Requirements
6. Feedback
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

- 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?

- 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:
Proposed Functionality
Proposed Functionality

- 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

1. Registrar sends escrow deposit to DEA.

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

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

   If a scheduled deposit is not received from a Registrar, the DEA submits the corresponding notification using RRI.
Data Escrow Agent Notification Contents

- 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

- Verify compliance with the Registrar Data Escrow Specification:

- 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.*

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

- 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

- 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.

---

```json
{
  "registrar": {
    "ianaId": "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.

```json
{
    "registrar": {
        "ianaId": "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"
        }
    }],
    "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.

```json
...,
"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."
  }
],
...
```

2 domain escrow records have invalid domain name syntax.

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

- 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?

<table>
<thead>
<tr>
<th>DEAs*</th>
<th>Registrars</th>
<th>Registries</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅ Must support the new and updated specifications.</td>
<td>✅ No changes in the required deposit format.</td>
<td>✅ No changes!</td>
</tr>
<tr>
<td>✅ Reporting process through RRI.</td>
<td>✅ Registrar access to RRI is <strong>OPTIONAL</strong>.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✅ … but Registrars interested in using RRI would need to provide data escrow reports.</td>
<td></td>
</tr>
</tbody>
</table>
Requesting Access to RRI

- 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

- 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.
Feedback
Suggestions Are Welcome

Please provide your feedback and join the discussion at:

https://mm.icann.org/listinfo/gtld-tech
Engage with ICANN

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