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G. Lozano
E. Alvarez
ICANN

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ICANN Registrar Interfaces
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Abstract

This document describes the interfaces provided by ICANN to Registrars and Data Escrow Agents in order to fulfill the data escrow requirements of the Registrar Accreditation Agreement and the Registrar Data Escrow Specifications.

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1. Introduction

This document describes the technical details of the interfaces provided by the Internet Corporation for Assigned Names and Numbers (ICANN) to Registrars and Data Escrow Agents in order to fulfill the data escrow requirements of the Registrar Accreditation Agreement [ICANN-RAA-2013] and the Registrar Data Escrow Specifications [ICANN-RDE-SPEC].

1.1. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

XML is case sensitive. Unless stated otherwise, XML specifications and examples provided in this document MUST be interpreted in the character case presented in order to develop a conforming implementation.

1.2. Date and Time

Numerous fields indicate "date and time", such as the creation and receipt dates for data escrow deposits. These fields SHALL contain timestamps indicating the date and time in UTC as specified in [RFC3339], with no offset from the zero meridian.

1.3. Common elements used in this specification

Common elements used in this specification are explained in this section.

- <base-url>: The base URL used in the reporting interfaces examples must be replaced with the URL indicated by ICANN.

- This document uses the term of "Differential" deposit as defined in the Registry Data Escrow Specification (see, [I-D.arias-noguchi-registry-data-escrow]), while the Registrar Data Escrow Specifications [ICANN-RDE-SPEC] refers to the same concept as "Incremental" deposit.

2. Interfaces for Registrar Data Escrow Notifications

This section describes the interfaces provided by ICANN to the Registrars and Data Escrow Agents in order to fulfill their reporting requirements related to Registrar Data Escrow Specifications [ICANN-RDE-SPEC].

2.1. Registrar Reporting

To notify that a data escrow deposit has been submitted to a Data Escrow Agent, the ICANN-accredited Registrar sends a <rdeReport:report> object (see, [I-D.lozano-icann-registry-interfaces]) to ICANN.

The following considerations apply for a <rdeReport:report> object corresponding to a data escrow deposit for a Registrar repository:

- The <rdeHeader:registrar> element in the <rdeHeader:header> object (see, [I-D.arias-noguchi-dnrd-objects-mapping]) MUST be present and have a value corresponding to the IANA Registrar ID assigned by ICANN.

- A <rdeHeader:count> element MUST be included with the corresponding "rcdn" attribute in the <rdeHeader:header> object to indicate the total domains in the Registrar repository for each Registry Class Domain Name (e.g. example) with at least one domain

name allocation at a specific point in time (watermark), regardless of the type of deposit: full or differential.

* If the "https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf" specification is being used as the <rdeReport:rydeSpecEscrow>, then the "uri" attribute in the <rdeHeader:count> elements for domain names MUST have a value of "urn:ietf:params:xml:ns:rdeDomain-1.0".

o To indicate that a Registrar repository has no domain names, one <rdeHeader:count> element MUST be included with the "uri" attribute value of "urn:ietf:params:xml:ns:rdeDomain-1.0", no "rcdn" attribute, and a value of 0 (zero).

The <rdeReport:report> object for each deposit successfully sent to the Data Escrow Agent is sent using the PUT HTTP verb in the interface provided by ICANN at:

<base-url>/report/registrar-escrow-report/<iana-id>/<id>

Where:

* <iana-id> MUST be substituted with the IANA Registrar ID assigned by ICANN for which the report is being provided.

* <id> MUST be substituted with the identifier assigned to this report, which MUST be the same as the "id" attribute from the <deposit>.

Note: The interface supports overwriting the information of a particular report <id> to support asynchronous interfaces between Registrars and Data Escrow Agents.

Example of a <rdeReport:report> object for a data escrow deposit corresponding to a Registrar repository:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdeReport:report
  xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
  xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
 <rdeReport:id>20170801001</rdeReport:id>
 <rdeReport:version>1</rdeReport:version>
 <rdeReport:rydeSpecEscrow>
 https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
 </rdeReport:rydeSpecEscrow>
 <rdeReport:resend>0</rdeReport:resend>
 <rdeReport:crDate>2017-08-01T00:15:00.0Z</rdeReport:crDate>
 <rdeReport:kind>FULL</rdeReport:kind>
 <rdeReport:watermark>2017-08-01T00:00:00Z</rdeReport:watermark>
 <rdeHeader:header>
   <rdeHeader:registrar>9999</rdeHeader:registrar>
   <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
      rcdn="com.example">2</rdeHeader:count>
   <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
      rcdn="test">8</rdeHeader:count>
   <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
      rcdn="xn--nqvo76h">3</rdeHeader:count>
 </rdeHeader:header>
</rdeReport:report>
```

Example of a <rdeReport:report> object for an empty data escrow deposit corresponding to a Registrar repository:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdeReport:report
  xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
  xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
 <rdeReport:id>20170801001</rdeReport:id>
 <rdeReport:version>1</rdeReport:version>
 <rdeReport:rydeSpecEscrow>
 https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
 </rdeReport:rydeSpecEscrow>
 <rdeReport:resend>0</rdeReport:resend>
 <rdeReport:crDate>2017-08-01T00:15:00.0Z</rdeReport:crDate>
 <rdeReport:kind>FULL</rdeReport:kind>
 <rdeReport:watermark>2017-08-01T00:00:00Z</rdeReport:watermark>
 <rdeHeader:header>
   <rdeHeader:registrar>9999</rdeHeader:registrar>
   <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0">
      0</rdeHeader:count>
 </rdeHeader:header>
</rdeReport:report>
```

2.2. Data Escrow Agent Reporting

The Registrar Data Escrow Specification requires that Registrar Data Escrow Agents deliver to ICANN a notification every time a successfully processed deposit is received from the Registrar regardless of the final status of the verification process, in addition to a failure notification if a scheduled deposit is not received from a Registrar.

In order to satisfy this requirement, the Data Escrow Agent sends to ICANN a <rdeNotification:notification> object as defined in Section 2 of [I-D.lozano-icann-registry-interfaces], to ICANN using the POST HTTP verb in the interface provided by ICANN at:

<base-url>/report/registrar-escrow-agent-notification/<iana-id>

Where:

* <iana-id> MUST be substituted with the IANA Registrar ID assigned by ICANN for which the notification is being provided.

A <rdeNotification:notification> with DRFN (Deposit Receipt Failure Notice) status is used to notify that a data escrow deposit has not been processed for verification for a past date where a deposit was scheduled to be received from the Registrar.

In addition to the considerations listed in Section 2.1 for the <rdeReport:report> object of the notification, if the data escrow deposit does not include an <id>, a unique value MUST be generated by the Data Escrow Agent to reference the deposit and it MUST be provided in the <rdeReport:id> element.

In the case of a <rdeNotification:notification> with DVFN (Deposit Verification Failure Notice) status, the <rdeNotification:results> element MUST be present and include a <iirdea:result> object for each deposit verification error condition and specify in the corresponding "domainCount" attribute the number of domain names with such error conditions.

Note: an error condition may be present several times in the the same domain escrow record (e.g. the administrative, technical and billing contact contain invalid email syntax). In this case only one domain name is affected by the error condition, therefore the "domainCount" attribute value must be increased by one in the corresponding <iirdea:result> object.

The following table defines the result codes and messages that a Data Escrow Agent could use to report verification issues found in a

Registrar data escrow deposit. When using result codes 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, or 2110, the "domainCount" attribute MUST be present.

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.
2004	Data escrow deposit PGP signature verification error.
2005	Archive includes unrecognized files.
2006	Invalid encoding for data escrow deposit file.
2007	Data escrow deposit file size exceeds maximum allowed size.
2008	Data escrow deposit file exceeds maximum allowed number of lines.
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.
2107	Invalid date syntax in Escrow Record.
2108	Invalid phone 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.
2203	A data escrow deposit has been already successfully verified for that date.

Registrar Data Escrow Deposit Verification Result Codes

Example of a <rdeNotification:notification> object of a Data Escrow Agent notification corresponding to a Registrar Data Escrow deposit that was not received or could not be processed for verification:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdeNotification:notification
 xmlns:rdeNotification="urn:ietf:params:xml:ns:rdeNotification-1.0">
 <rdeNotification:deaName>Escrow Agent Inc.</rdeNotification:deaName>
 <rdeNotification:version>1</rdeNotification:version>
 <rdeNotification:repDate>2017-06-17</rdeNotification:repDate>
 <rdeNotification:status>DRFN</rdeNotification:status>
 <rdeNotification:lastFullDate>2017-06-10
   </rdeNotification:lastFullDate>
</rdeNotification:notification>
```

Example of a <rdeNotification:notification> object of a Data Escrow Agent notification corresponding to a Registrar repository Data Escrow deposit that has passed the verification process:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdeNotification:notification
 xmlns:rdeNotification="urn:ietf:params:xml:ns:rdeNotification-1.0"
 xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
 xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
 <rdeNotification:deaName>Escrow Agent Inc.</rdeNotification:deaName>
 <rdeNotification:version>1</rdeNotification:version>
 <rdeNotification:repDate>
   2017-06-17</rdeNotification:repDate>
 <rdeNotification:status>DVPN</rdeNotification:status>
 <rdeNotification:reDate>
   2017-06-17T03:15:00.0Z</rdeNotification:reDate>
 <rdeNotification:vaDate>
   2017-06-17T05:15:00.0Z</rdeNotification:vaDate>
 <rdeNotification:lastFullDate>
   2017-06-17</rdeNotification:lastFullDate>
 <rdeReport:report>
  <rdeReport:id>20170617001</rdeReport:id>
  <rdeReport:version>1</rdeReport:version>
  <rdeReport:rydeSpecEscrow>
 https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
  </rdeReport:rydeSpecEscrow>
  <rdeReport:resend>0</rdeReport:resend>
  <rdeReport:crDate>2017-06-17T00:15:00.0Z</rdeReport:crDate>
  <rdeReport:kind>FULL</rdeReport:kind>
  <rdeReport:watermark>2017-06-17T00:00:00Z</rdeReport:watermark>
   <rdeHeader:header>
     <rdeHeader:registrar>9999</rdeHeader:registrar>
     <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
        rcdn="example">2</rdeHeader:count>
     <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
        rcdn="test">6</rdeHeader:count>
     <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
        rcdn="xn--nqvo76h">1</rdeHeader:count>
   </rdeHeader:header>
 </rdeReport:report>
</rdeNotification:notification>
```


Example of a <rdeNotification:notification> object of a Data Escrow Agent notification corresponding to a Registrar repository Data Escrow deposit that has failed the verification process:


```
<?xml version="1.0" encoding="UTF-8"?>
<rdeNotification:notification
 xmlns:rdeNotification="urn:ietf:params:xml:ns:rdeNotification-1.0"
 xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
 xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0"
```

```
    xmlns:iirdea="urn:ietf:params:xml:ns:iirdea-1.0">
    <rdeNotification:deaName>Escrow Agent Inc.</rdeNotification:deaName>
    <rdeNotification:version>1</rdeNotification:version>
    <rdeNotification:repDate>2017-06-17</rdeNotification:repDate>
    <rdeNotification:status>DVFN</rdeNotification:status>
    <rdeNotification:results>
      <iirdea:result code="2104" domainCount="2">
        <iirdea:msg>
          Invalid domain name syntax in Escrow Record.
        </iirdea:msg>
      </iirdea:result>
      <iirdea:result code="2110" domainCount="1">
        <iirdea:msg>
          Handle reference by Escrow Record not found.
        </iirdea:msg>
      </iirdea:result>
    </rdeNotification:results>
    <rdeNotification:reDate>
      2017-06-17T03:15:00.0Z
    </rdeNotification:reDate>
    <rdeNotification:vaDate>
      2017-06-17T05:15:00.0Z
    </rdeNotification:vaDate>
    <rdeNotification:lastFullDate>
      2017-06-14
    </rdeNotification:lastFullDate>
    <rdeReport:report>
     <rdeReport:id>20170617001</rdeReport:id>
     <rdeReport:version>1</rdeReport:version>
     <rdeReport:rydeSpecEscrow>
    https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
     </rdeReport:rydeSpecEscrow>
     <rdeReport:resend>0</rdeReport:resend>
     <rdeReport:crDate>2017-06-17T00:15:00.0Z</rdeReport:crDate>
     <rdeReport:kind>FULL</rdeReport:kind>
     <rdeReport:watermark>2017-06-17T00:00:00Z</rdeReport:watermark>
     <rdeHeader:header>
        <rdeHeader:registrar>9999</rdeHeader:registrar>
        <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
           rcdn="example">2</rdeHeader:count>
        <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
           rcdn="test">8</rdeHeader:count>
        <rdeHeader:count uri="urn:ietf:params:xml:ns:rdeDomain-1.0"
           rcdn="xn--nqvo76h">3</rdeHeader:count>
     </rdeHeader:header>
    </rdeReport:report>
   </rdeNotification:notification>
```

3. Technical details of the interfaces

Content-type value in the HTTP header:

- o The client MUST set "text/xml" in the HTTP header Content-type when using the Data Escrow Agent Reporting and Registrar Reporting interfaces described in Section 2.

After successfully receiving and processing an input, the interfaces return any of the HTTP status codes described in Section 4 of [I-D.lozano-icann-registry-interfaces].

The following sections provide the IIRDEA Result Codes that can be expected in the <response> object from each interface:

3.1. Registrar Reporting

The following table lists the result codes of the interface:

Result Code	Message
1000	No ERRORs were found and the report has been accepted by ICANN.
2001	The request did not validate against the schema.
2004	Report for a date in the future. The <crDate> and <watermark> date should not be in the future.
2005	Version is not supported.
2006	The <id> in the <report> element and the <id> in the URL path do not match.
2301	Interface is disabled for this Registrar.
2302	The <crDate> and <watermark> date should not be before the creation date of the Registrar in the system.
2303	The <registrar> in the <header> and the <iana-id> in the URL path do not match.
2304	Report regarding an differential deposit received when a full deposit was expected (<watermark>).
2305	<rcdn> attribute missing in count element provided in the <header>.
2306	Multiple count elements with the same <uri> and <rcdn> attribute values provided in the <header>.
2307	Missing required <registrar> element in the <header>.
2312	An invalid NR-LDH label or A-label was found or the domain name syntax is invalid in the <rcdn> attribute.
2313	INCR <rdeReport:kind> is not supported.

Registrar Data Escrow Reporting Result Codes

3.2. Data Escrow Agent Reporting

The following table lists the result codes of the interface:

Result Code	Message
1000	No ERRORs were found and the notification has been accepted by ICANN.
2001	The request did not validate against the schema.
2002	A DVPN notification exists for that date (<repDate>).
2004	Notification for a date in the future. The <crDate>, <watermark>, <lastFullDate> and <repDate> date should not be in the future.
2005	Version is not supported.
2201	The <repDate> and <watermark> in the notification do not match.
2203	A Deposit Verification Pass Notice (DVPN) notification was received, but the Domain Name count is missing in the <header>.
2204	The notification for the report "id" already exists.
2207	A DVPN or DVFN was received, but the <report> element is missing in the notification.
2208	A DRFN was received, but a <report> element exists in the notification.
2209	<reDate> and <vaDate> elements must not be present in a DRFN.
2301	Interface is disabled for this Registrar.
2302	The <crDate> and <watermark> and <repDate> date should not be before the creation date of the Registrar in the system.
2303	The <registrar> in the <header> and the <iana-id> in the URL path do not match.
2304	Notification regarding an differential deposit received when a full deposit was expected (<repDate>).
2305	<rcdn> attribute missing in count element provided in the <header>.
2306	Multiple count elements with the same <uri> and <rcdn> attribute values provided in the <header>.
2307	Missing required <registrar> element in the <header>.
2309	A DVFN was received, but the <results> element is missing in the notification.
2310	The specified result code in the <result> element requires the "domainCount" attribute to be present.
2311	Unrecognized value in the "code" attribute of the <result> element.
2312	An invalid NR-LDH label or A-label was found or the

```
|        | domain name syntax is invalid in the <rcdn> attribute.   |
| 2313   | INCR <rdeReport:kind> is not supported.                  |
+--------+----------------------------------------------------------+
```

Data Escrow Agent Reporting Result Codes

4. Monitoring Registrar reporting

Registrars MAY monitor the status of the data escrow reporting notifications requirement using the following interfaces that support the GET HTTP verb.

4.1. Monitoring the reporting status of a Registrar

Registrars MAY monitor the general reporting status and obtain a list of any outstanding issues using the following interface:

<base-url>/info/status/registrar/<iana-id>

Where:

* <iana-id> MUST be substituted with the IANA ID assigned by ICANN to the Registrar being queried.

This interface provides a <rriReporting:summary> element as defined in Section 2 of [I-D.lozano-icann-registry-interfaces] that uses the <rdeHeader:registrar> element and includes the following <rriReporting:type> values:

o "Registrar_Escrow_Report" : For Registrar Data Escrow Reporting as defined in Section 2.1. The "date" attribute for any reporting issue is provided in "YYYY-MM-DD" format.

o "DEA_Notification" : For Data Escrow Agent Notifications as defined in Section 2.2. The "date" attribute for any reporting issue is provided in "YYYY-MM-DD" format.

Example of response for a Registrar status check with no reporting issues:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 1125

<?xml version="1.0" encoding="UTF-8"?>
<rriReporting:summary
  xmlns:rriReporting="urn:ietf:params:xml:ns:rriReporting-1.0"
  xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
  <rdeHeader:registrar>9999</rdeHeader:registrar>
  <rriReporting:creationDate>
    2017-06-10T12:00:30.101Z</rriReporting:creationDate>
  <rriReporting:depositSchedule>Daily</rriReporting:depositSchedule>
  <rriReporting:lastFullDate>2017-10-15</rriReporting:lastFullDate>
  <rriReporting:statusReports>
    <rriReporting:statusReport>
      <rriReporting:type>Registrar_Escrow_Report</rriReporting:type>
      <rriReporting:enabled>false</rriReporting:enabled>
      <rriReporting:status>ok</rriReporting:status>
    </rriReporting:statusReport>
    <rriReporting:statusReport>
      <rriReporting:type>DEA_Notification</rriReporting:type>
      <rriReporting:enabled>true</rriReporting:enabled>
      <rriReporting:status>ok</rriReporting:status>
    </rriReporting:statusReport>
  </rriReporting:statusReports>
  <rriReporting:timestamp>
    2017-10-20T02:22:14.148Z</rriReporting:timestamp>
</rriReporting:summary>
```

Example of response for a Registrar status check with reporting issues:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 1604

<?xml version="1.0" encoding="UTF-8"?>
<rriReporting:summary
  xmlns:rriReporting="urn:ietf:params:xml:ns:rriReporting-1.0"
  xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
  <rdeHeader:registrar>9999</rdeHeader:registrar>
  <rriReporting:creationDate>
        2017-06-10T12:00:30.101Z</rriReporting:creationDate>
  <rriReporting:depositSchedule>Daily</rriReporting:depositSchedule>
  <rriReporting:lastFullDate>2017-10-08</rriReporting:lastFullDate>
  <rriReporting:statusReports>
    <rriReporting:statusReport>
      <rriReporting:type>Registrar_Escrow_Report</rriReporting:type>
      <rriReporting:enabled>true</rriReporting:enabled>
      <rriReporting:status>ok</rriReporting:status>
    </rriReporting:statusReport>
    <rriReporting:statusReport>
      <rriReporting:type>DEA_Notification</rriReporting:type>
      <rriReporting:enabled>true</rriReporting:enabled>
      <rriReporting:status>unsatisfactory</rriReporting:status>
      <rriReporting:issues>
        <rriReporting:issue date="2017-10-14"
              description="Invalid_Deposit_Diff" />
        <rriReporting:issue date="2017-10-15"
              description="Missing_Deposit_Full" />
        <rriReporting:issue date="2017-10-16"
              description="Missing_Deposit_Diff" />
        <rriReporting:issue date="2017-10-17"
              description="No_Report_Received" />
      </rriReporting:issues>
    </rriReporting:statusReport>
  </rriReporting:statusReports>
  <rriReporting:timestamp>
        2017-10-20T02:22:14.148Z</rriReporting:timestamp>
</rriReporting:summary>
```

4.2. Monitoring Registrar Data Escrow Reports

Registrars MAY monitor the status of their Data Escrow reports using the following interface:

```
<base-url>/info/report/registrar-escrow-report/<iana-id>/<date>
```

Where:

* <iana-id> MUST be substituted with the IANA ID assigned by ICANN to the Registrar being queried.

* <date> MUST be substituted with the date being queried in "YYYY-MM-DD" format. For example: 2017-08-01

Possible results are:

o The interface provides a HTTP/200 status code with a <rdeReports:reports> element in the response content as defined in Section 2 of [I-D.lozano-icann-registry-interfaces], listing each <rdeReport:report> successfully received with watermark value that matches the queried date.

Example of response for a Registrar Data Escrow Reporting status check:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 1194

<?xml version="1.0" encoding="UTF-8"?>
<rdeReports:reports
 xmlns:rdeReports="urn:ietf:params:xml:ns:rdeReports-1.0"
 xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
 xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
 <rdeReports:receivedReport>
  <rdeReports:received>2017-10-13T00:30:13.741Z</rdeReports:received>
  <rdeReport:report>
   <rdeReport:id>20171013001</rdeReport:id>
   <rdeReport:version>1</rdeReport:version>
   <rdeReport:rydeSpecEscrow>
 https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
   </rdeReport:rydeSpecEscrow>
   <rdeReport:resend>0</rdeReport:resend>
   <rdeReport:crDate>2017-10-13T00:01:11.000Z</rdeReport:crDate>
   <rdeReport:kind>FULL</rdeReport:kind>
   <rdeReport:watermark>2017-10-13T00:00:00.00Z</rdeReport:watermark>
   <rdeHeader:header>
    <rdeHeader:registrar>9999</rdeHeader:registrar>
    <rdeHeader:count rcdn="example"
      uri="urn:ietf:params:xml:ns:rdeDomain-1.0">10</rdeHeader:count>
    <rdeHeader:count rcdn="test"
      uri="urn:ietf:params:xml:ns:rdeDomain-1.0">1</rdeHeader:count>
   </rdeHeader:header>
  </rdeReport:report>
 </rdeReports:receivedReport>
</rdeReports:reports>
```

4.3. Monitoring Registrar Data Escrow Agent Notifications

Registrars and Data Escrow Agents MAY monitor the status of Data Escrow Agent Notifications using the following interface:

```
<base-url>/info/report/registrar-escrow-agent-notification/<iana-
id>/<date>
```

Where:

* <iana-id> MUST be substituted with the IANA ID assigned by ICANN to the Registrar being queried.

* <date> MUST be substituted with the date being queried in "YYYY-MM-DD" format. For example: 2017-08-01

Possible results are:

- The interface provides a HTTP/200 status code with a <rdeNotifications:notifications> element in the response content as defined in Section 2 of [I-D.lozano-icann-registry-interfaces], listing each <rdeNotification:notification> successfully received with a watermark value that matches the queried date.

Example of a response of a Registrar Data Escrow Agent Notification status check for a date with 2 received notifications:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 2578

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<rdeNotifications:notifications
 xmlns:iirdea="urn:ietf:params:xml:ns:iirdea-1.0"
 xmlns:rdeNotifications="urn:ietf:params:xml:ns:rdeNotifications-1.0"
 xmlns:rdeNotification="urn:ietf:params:xml:ns:rdeNotification-1.0"
 xmlns:rdeReport="urn:ietf:params:xml:ns:rdeReport-1.0"
 xmlns:rdeHeader="urn:ietf:params:xml:ns:rdeHeader-1.0">
 <rdeNotifications:receivedNotification>
  <rdeNotifications:received>
    2017-10-17T23:59:59.0Z</rdeNotifications:received>
  <rdeNotification:notification>
   <rdeNotification:deaName>
     Escrow Agent Inc.</rdeNotification:deaName>
   <rdeNotification:version>1</rdeNotification:version>
   <rdeNotification:repDate>2017-10-17</rdeNotification:repDate>
   <rdeNotification:status>DRFN</rdeNotification:status>
   <rdeNotification:lastFullDate>
     2017-10-14</rdeNotification:lastFullDate>
  </rdeNotification:notification>
 </rdeNotifications:receivedNotification>
 <rdeNotifications:receivedNotification>
  <rdeNotifications:received>
    2017-10-18T06:00:00.0Z</rdeNotifications:received>
  <rdeNotification:notification>
   <rdeNotification:deaName>
     Escrow Agent Inc.</rdeNotification:deaName>
   <rdeNotification:version>1</rdeNotification:version>
   <rdeNotification:repDate>2017-10-17</rdeNotification:repDate>
   <rdeNotification:status>DVPN</rdeNotification:status>
   <rdeNotification:reDate>
     2017-10-18T03:15:00.0Z</rdeNotification:reDate>
   <rdeNotification:vaDate>
     2017-10-18T05:15:00.0Z</rdeNotification:vaDate>
```

```
      <rdeNotification:lastFullDate>
        2017-10-17</rdeNotification:lastFullDate>
      <rdeReport:report>
       <rdeReport:id>20171017001</rdeReport:id>
       <rdeReport:version>1</rdeReport:version>
       <rdeReport:rydeSpecEscrow>
    https://www.icann.org/en/system/files/files/rde-specs-09nov07-en.pdf
       </rdeReport:rydeSpecEscrow>
       <rdeReport:resend>0</rdeReport:resend>
       <rdeReport:crDate>2017-10-17T00:15:00.0Z</rdeReport:crDate>
       <rdeReport:kind>FULL</rdeReport:kind>
       <rdeReport:watermark>2017-10-17T00:00:00Z</rdeReport:watermark>
       <rdeHeader:header>
       <rdeHeader:registrar>9999</rdeHeader:registrar>
       <rdeHeader:count rcdn="example"
         uri="urn:ietf:params:xml:ns:rdeDomain-1.0">10</rdeHeader:count>
       <rdeHeader:count rcdn="test"
         uri="urn:ietf:params:xml:ns:rdeDomain-1.0">1</rdeHeader:count>
      </rdeHeader:header>
      </rdeReport:report>
     </rdeNotification:notification>
    </rdeNotifications:receivedNotification>
   </rdeNotifications:notifications>
```


5. IANA Considerations

TODO

6. Security Considerations

TODO

7. Change History

[[RFC Editor: Please remove this section.]]

7.1. Version 00

Initial version.

7.2. Version 01

- Added clarifications, list of result codes that require the "domainCount" attribute to be present, and additional examples of <rdeNotification> objects in Section 2.2.

- o Removed HTTP/404 from the possible results of interfaces to monitor data escrow notifications and registrar reports.

7.3. Version 02

1. Ping update.

7.4. Version 03

1. Ping update.

7.5. Version 04

1. Ping update.

8. References

8.1. Normative References

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8.2. Informative References

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Authors' Addresses

Gustavo Lozano
ICANN
12025 Waterfront Drive, Suite 300
Los Angeles 90292
US

Phone: +1.3103015800
Email: gustavo.lozano@icann.org

Eduardo Alvarez
ICANN
12025 Waterfront Drive, Suite 300
Los Angeles 90292
US

Phone: +1.3103015800
Email: eduardo.alvarez@icann.org