

# **Pre-Delegation Testing**

## **Data Escrow Test Cases**

**Version E**

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## Document control

### Document information and security

Made by	Responsible for fact	Responsible for document
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## 1. Introduction

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### 1.1 Scope

All of the test cases for the data escrow can be found in this document.

### 1.2 References

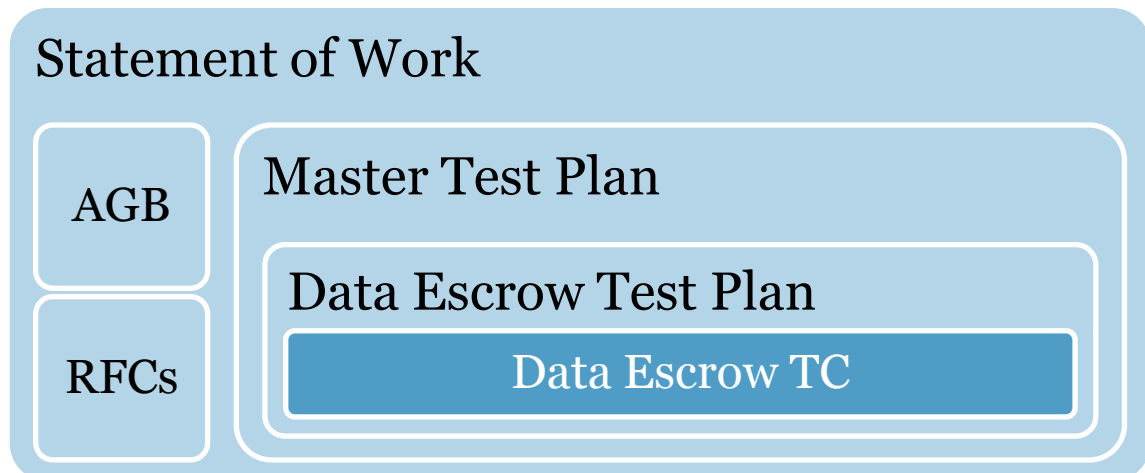
#### 1.2.1 External

- IEEE 829-2008
- ICANN gTLD Applicant Guidebook, Version 2012-06-04
- <http://tools.ietf.org/html/draft-arias-noguchi-registry-data-escrow>
- <http://tools.ietf.org/html/draft-arias-noguchi-dnrd-objects-mapping>
- <http://tools.ietf.org/html/draft-gould-thippeswamy-dnrd-csv-mapping>

#### 1.2.2 Internal

- Pre-Delegation Testing, Statement of Work
- Pre-Delegation Testing, Master Test Plan
- Pre-Delegation Testing, Data Escrow Test Plan

#### 1.2.3 Document Hierarchy



### 1.3 Context

All tests are performed locally in the test environment.

### 1.4 Notation for description

Each test case for the data escrow is described in their own chapter. The test procedures are described directly in the test case.

## 2. Data Escrow File Name 01

---

### 2.1 Test case identifier

DataEscrowFileName01

### 2.2 Objective

The test will receive one full deposit of sample data. The objective is to verify file names.

Requirements from the test plan: [R21], [AGB1], [REG4]

### 2.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
DataFileFull-[1..n]	The files containing the full deposit	Files
DataSigFull-[1..n]	The files containing the signature	Files

### 2.4 Outcome(s)

Files **MUST** be named according to the following convention:

{gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

### 2.5 Environmental needs

This test has no environmental needs.

### 2.6 Special procedural requirements

This test has no special procedural requirements.

### 2.7 Intercase dependencies

This test has no intercase dependencies.

## 2.8 Ordered description of steps to be taken to execute the test case

All of the checks are case insensitive.

The data files **MUST** follow this format {gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

For each <**DataFileFull**>, check that:

1. {gTLD} is equal to <**TLD**>. If it is an IDN-TLD, then this **MUST** be the A-label.
2. {YYYY-MM-DD} is equal to year, month, and day. The file **MUST** be maximum 40 days old.
3. {type} is equal to "full".
4. {#} is a number greater than or equal to 1. Leading zeroes are not allowed.
5. {rev} is a number greater than or equal to 0. Leading zeroes are not allowed.
6. {ext} is equal to "ryde".

The signature files **MUST** follow this format {gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

For each <**DataSigFull**>, check that:

1. {gTLD} is equal to <**TLD**>. If it is an IDN-TLD, then this **MUST** be the A-label.
2. {YYYY-MM-DD} is equal to year, month, and day. The file **MUST** be maximum 40 days old.
3. {type} is equal to "full".
4. {#} is a number greater than or equal to 1. Leading zeroes are not allowed.
5. {rev} is a number greater than or equal to 0. Leading zeroes are not allowed.
6. {ext} is equal to "sig".

### 3. Data Escrow File Name 02

---

#### 3.1 Test case identifier

DataEscrowFileName02

#### 3.2 Objective

This test is optional and will only be performed if the applicant has supplied a differential deposit.

The test will receive one differential deposit of sample data. The objective is to verify file names.

Requirements from the test plan: [R21], [AGB2], [REG4]

#### 3.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
DataFileDiff-[1..n]	The files containing the differential deposit	Files
DataSigDiff-[1..n]	The files containing the signature	Files

#### 3.4 Outcome(s)

Files **MUST** be named according to the following convention:

{gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

#### 3.5 Environmental needs

This test has no environmental needs.

#### 3.6 Special procedural requirements

This test has no special procedural requirements.

#### 3.7 Intercase dependencies

This test has no intercase dependencies.



### 3.8 Ordered description of steps to be taken to execute the test case

All of the checks are case insensitive.

The data files **MUST** follow this format {gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

For each <**DataFileDiff**>, check that:

1. {gTLD} is equal to <**TLD**>. If it is an IDN-TLD, then this **MUST** be the A-label.
2. {YYYY-MM-DD} is equal to year, month, and day. The file **MUST** be maximum 40 days old.
3. {type} is equal to "diff".
4. {#} is a number greater than or equal to 1. Leading zeroes are not allowed.
5. {rev} is a number greater than or equal to 0. Leading zeroes are not allowed.
6. {ext} is equal to "ryde".

The signature files **MUST** follow this format {gTLD}\_{YYYY-MM-DD}\_{type}\_S{#}\_R{rev}.{ext}

For each <**DataSigDiff**>, check that:

1. {gTLD} is equal to <**TLD**>. If it is an IDN-TLD, then this **MUST** be the A-label.
2. {YYYY-MM-DD} is equal to year, month, and day. The file **MUST** be maximum 40 days old.
3. {type} is equal to "diff".
4. {#} is a number greater than or equal to 1. Leading zeroes are not allowed.
5. {rev} is a number greater than or equal to 0. Leading zeroes are not allowed.
6. {ext} is equal to "sig".

## 4. Data Escrow Verify 01

---

### 4.1 Test case identifier

DataEscrowVerify01

### 4.2 Objective

The test will verify the signatures of the received files. If it is a multi-part transmission, then the files are put together. Decrypt and uncompress the result.

Requirements from the test plan: [R21], [AGB1], [REG3], [REG6.1], [REG6.2], [REG6.3], [ALGO]

### 4.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
DataFileFull-[1..n]	The files containing the full deposit	Files
DataSigFull-[1..n]	The files containing the signature	Files
DataRegPubKey	The public key used for verification	File

### 4.4 Outcome(s)

- The signature, encryption, and compression are done in accordance with RFC 4880.
- The files **MUST** be signed using RSA, DSA, or ECDSA with SHA1, RIPEMD160, SHA224, SHA256, SHA384, or SHA512.
- If multi-part files, then all files **MUST** be present.
- The files **MUST** be encrypted using RSA, Elgamal, or ECDH with IDEA, TripleDES, CAST5, Blowfish, AES128, AES192, AES256, or Twofish.
- The decrypted and uncompressed file will be used in upcoming test.

### 4.5 Environmental needs

This test has no environmental needs.

### 4.6 Special procedural requirements

This test has no special procedural requirements.

### 4.7 Intercase dependencies

DataEscrowFileName01 must first have been executed successfully.

## 4.8 Ordered description of steps to be taken to execute the test case

All operations are done in accordance with RFC 4880.

For each **<DataSigFull>**:

1. Validate the signature. It **MUST** be possible to validate the **<DataFileFull>** using the signature and the **<DataRegPubKey>**.
2. Check the properties of the signature:
  - a. Digest algorithm SHA1, RIPEMD160, SHA224, SHA256, SHA384, or SHA512 **MUST** be used. MD5 is deprecated and **MUST NOT** be used.
  - b. Public key algorithm RSA, DSA or ECDSA **MUST** be used.

If there is more than one **<DataFileFull>**:

1. All file parts **MUST** be present. See {#} in the file name and that they form a sequence of numbers starting with 1.
2. Concatenate the files in order.

Decrypt and uncompress the (concatenated) file:

1. Decrypt the file using the private test key. The file will be uncompressed automatically by the client software.
2. Check the properties of the encrypted file:
  - a. Symmetric algorithm IDEA, TripleDES, CAST5, Blowfish, AES128, AES192, AES256, or Twofish **MUST** be used.
  - b. Public key algorithm RSA, Elgamal or ECDH **MUST** be used. (Note that this will always be RSA because of the PDT Provider's public key.)
3. Check the original file name of the unencrypted file. It **MUST** be the same as the encrypted deposit but with extension tar.

Untar the decrypted archive and check that there is an XML file. It **MUST** be named as the deposit but with the extension xml. The XML file **MUST NOT** be placed in any subdirectory within the archive.

## 5. Data Escrow Verify 02

---

### 5.1 Test case identifier

DataEscrowVerify02

### 5.2 Objective

This test is optional and will only be performed if the applicant has supplied a differential deposit.

The test will verify the signature of the received files. If it is a multi-part transmission, then the files are put together. Decrypt and uncompress the result.

Requirements from the test plan: [R21], [AGB2], [REG3], [REG6.1], [REG6.2], [REG6.3], [ALGO]

### 5.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
DataFileDiff-[1..n]	The files containing the differential deposit	Files
DataSigDiff-[1..n]	The files containing the signature	Files
DataRegPubKey	The public key used for verification	File

### 5.4 Outcome(s)

- The signature, encryption, and compression are done in accordance with RFC 4880.
- The files **MUST** be signed using RSA, DSA, or ECDSA with SHA1, RIPEMD160, SHA224, SHA256, SHA384, or SHA512.
- If multi-part files, then all files **MUST** be present.
- The files **MUST** be encrypted using RSA, Elgamal, or ECDH with IDEA, TripleDES, CAST5, Blowfish, AES128, AES192, AES256, or Twofish.
- The decrypted and uncompressed file will be used in upcoming test.

### 5.5 Environmental needs

This test has no environmental needs.

### 5.6 Special procedural requirements

This test has no special procedural requirements.

### 5.7 Intercase dependencies

DataEscrowFileName02 must first have been executed successfully.

## 5.8 Ordered description of steps to be taken to execute the test case

All operations are done in accordance with RFC 4880.

For each **<DataSigDiff>**:

1. Validate the signature. It **MUST** be possible to validate the **<DataFileDiff>** using the signature and the **<DataRegPubKey>**.
2. Check the properties of the signature:
  - a. Digest algorithm SHA1, RIPEMD160, SHA224, SHA256, SHA384, or SHA512 **MUST** be used. MD5 is deprecated and **MUST NOT** be used.
  - b. Public key algorithm RSA, DSA or ECDSA **MUST** be used.

If there is more than one **<DataFileDiff>**:

1. All file parts **MUST** be present. See {#} in the file name and that they form a sequence of numbers starting with 1.
2. Concatenate the files in order.

Decrypt and uncompress the (concatenated) file:

1. Decrypt the file using the private test key. The file will be uncompressed automatically by the client software.
2. Check the properties of the encrypted file:
  - a. Symmetric algorithm IDEA, TripleDES, CAST5, Blowfish, AES128, AES192, AES256, or Twofish **MUST** be used.
  - b. Public key algorithm RSA, Elgamal or ECDH **MUST** be used. (Note that this will always be RSA because of the PDT Provider's public key.)
3. Check the original file name of the unencrypted file. It **MUST** be the same as the encrypted deposit but with extension tar.

Untar the decrypted archive and check that there is an XML file. It **MUST** be named as the deposit but with the extension xml. The XML file **MUST NOT** be placed in any subdirectory within the archive.

## 6. Data Escrow Content 01

---

### 6.1 Test case identifier

DataEscrowContent01

### 6.2 Objective

This test will validate the full deposit against the profile.

Requirements from the test plan: [R21], [R22], [AGB1], [REG2], [REG6.4]

### 6.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
DataFileFull	The unencrypted file containing the full deposit	File
DataProfile	The data escrow profile described using W3C XML Schema. Provided by ICANN.	XML file

### 6.4 Outcome(s)

The full deposit **MUST** have valid XML and contain required and valid attributes.

### 6.5 Environmental needs

This test has no environmental needs.

### 6.6 Special procedural requirements

This test has no special procedural requirements.

### 6.7 Intercase dependencies

DataEscrowVerify01 must first have been executed successfully.

### 6.8 Ordered description of steps to be taken to execute the test case

1. Check if it is an XML or CSV deposit.
  - a. If CSV deposit, then the corresponding XML in the tests below.
2. Validate the <DataFileFull> XML file against the <DataProfile> XML schema provided by ICANN. The applicant **MUST** use extensions which have been agreed upon with ICANN.
3. Check the content of the XML:
  - a. The type **MUST** be "FULL".
  - b. The date part of the watermark **MUST** match the date in the file name.
  - c. There **MUST NOT** be a "deletes" element in the file.

## 7. Data Escrow Content 02

---

### 7.1 Test case identifier

DataEscrowContent02

### 7.2 Objective

This test is optional and will only be performed if the applicant has supplied a differential deposit.

This test will validate the differential deposit against the profile.

Requirements from the test plan: [R21], [R22], [AGB2], [REG2], [REG6.4]

### 7.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
DataFileDiff	The unencrypted file containing the differential deposit	File
DataProfile	The data escrow profile described using W3C XML Schema. Provided by ICANN.	XML file

### 7.4 Outcome(s)

The differential deposit **MUST** have valid XML and contain required and valid attributes.

### 7.5 Environmental needs

This test has no environmental needs.

### 7.6 Special procedural requirements

This test has no special procedural requirements.

### 7.7 Intercase dependencies

DataEscrowVerify02 must first have been executed successfully.

### 7.8 Ordered description of steps to be taken to execute the test case

1. Check if it is an XML or CSV deposit.
  - a. If CSV deposit, then the corresponding XML in the tests below.
2. Validate the <DataFileDiff> XML file against the <DataProfile> XML schema provided by ICANN. The applicant **MUST** use extensions which have been agreed upon with ICANN.
3. Check the content of the XML:
  - a. The type **MUST** be "DIFF".
  - b. The prevId attribute **MUST** be present.
  - c. The date part of the watermark **MUST** match the date in the file name.

## 8. Global

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### 8.1 Glossary

The glossary is available in the Master Test Plan.

### 8.2 Document change procedures

Document change procedures are documented in the Master Test Plan.