

## **Appendix 1 Data Escrow Specification**

This Appendix 1 to the Sponsored TLD Sponsorship Agreement consists of four of the five exhibits to the Data Escrow Agreement that constitutes Appendix 2 to the Sponsored TLD Registry Operator Agreement:

Exhibit A-Schedule for Escrow Deposits

Exhibit B-Escrow Deposit Format Specification

Exhibit C-Escrow Transfer Process

Exhibit D-Escrow Verification Procedures

The fifth exhibit (Exhibit E), which sets forth Escrow Agent's fees, is subject to negotiation between Registry Operator and Escrow Agent.

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### **Exhibit A SCHEDULE FOR ESCROW DEPOSITS**

#### **Full Deposit Schedule**

Full Deposits shall consist of data that reflects the state of the registry as of 0000 UTC on each Sunday. Pending transactions at that time (i.e. transactions that have not been committed to the Registry Database) shall not be reflected in the Full Deposit.

Full Deposits shall be made, according to the transfer process described in Exhibit C below, within a four-hour window beginning at 0400 UTC on the same Sunday.

#### **Incremental Deposit Schedule**

Incremental Deposits shall reflect database transactions made since the most recent Full or Incremental Deposit. Incremental Deposits for Mondays shall include transactions completed through 0000 UTC on that day that had not been committed to the registry database at the time the last Full Deposit was taken. Incremental Deposits on Tuesday through Saturday shall include transactions completed through 0000 UTC on the day of the deposit that were not reflected in the immediately prior Incremental Deposit.

Incremental Deposits shall be made, according to the transfer process described in Exhibit C below, within a four-hour window beginning at 0400 UTC on the day to which the Incremental Deposit relates.

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**Exhibit B**  
**ESCROW DEPOSIT FORMAT SPECIFICATION**

Each Full and Incremental Deposit consists of a series of reports that are concatenated in the escrow process.

**Full Deposit Contents.** The reports involved in a Full Deposit are:

Domain Object Report—This reports on the contents of all domain objects in the registry database.

Host Object Report—This reports on the contents of all host objects in the registry database.

Contact Object Report—This reports on the contents of all contact objects in the registry database.

Registrar Object Report—This reports on the contents of all registrar objects in the registry database.

**Incremental Deposit Contents.** The report involved in an Incremental Deposit is:

Transaction Report—This reports on the contents of all transaction records included in the Incremental Deposit.

**Format of Reports.** All reports are to be formatted in XML format. In compliance with the XML 1.0 specification, certain characters in the data must be escaped, as described in item 1 below. Each Report shall then be prepared according to the general XML format described in items 2 to 7 below. Item 2 describes the report container that is common to all reports. Items 3 to 7 describe the structure of the contents of the report container for each of the specific reports.

**1. Escape-Character Requirements.** In compliance with the XML 1.0 specification, in data escrowed using the XML format the following characters in any data elements must be replaced with the corresponding escape sequences listed here:

<b>Character</b>	<b>Escape Sequence</b>
"	&quot;
&	&amp;
'	&apos;
<	&lt;
>	&gt;

**2. The Report Container.** At its highest level, the XML format consists of an escrow container with header attributes followed by escrow data. The header attributes are required and include the version of escrow (1.0), the Sponsored TLD ("[---]"), the report type (domain, host, contact, registrar, or transaction), and database-committed date and time as to which the escrow relates. The date and time of the escrow will be specified in UTC. The general format of the report container is as follows:

```
<?xml version="1.0" encoding='UTF-8' ?>
<!DOCTYPE escrow SYSTEM "whois-export.dtd" >
<escrow version="1.0" tld="[---]" report="domain" date="26-Aug-2001 3:15:00AM">
```

{Here the report contains the actual data being escrowed. It contains one element for each object of the type (domain, host, contact, registrar, or transaction) covered by the report. The specific format for each report is described in items 3 to 7 below.}

```
</escrow>
```

**3. The Domain Element.** The domain element has the property "fqdn" (the fully qualified name of the domain) and is a container consisting of the following elements:

- a. status: The domain status code.
- b. id: Unique identifier of the domain name
- c. owned-by: An identification of the sponsoring registrar of the domain. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- d. ens-authid: ENS authorization code.
- e. maintainer-url: URL of site of maintainer of domain name.
- f. created-code: A reference to the transaction that created the domain object.
- g. created-on: The date/time the domain object was originally created.
- h. created-by: An identification of the registrar that created the domain object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- i. renewed-on: The date/time the domain was last renewed.
- j. expires-on: The date the registration expires.
- k. updated-by: An identification of the registrar that last updated the domain object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- l. updated-on: The date/time the domain object was last updated.

- m. transferred-by: An identification of the registrar that last transferred the domain object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- n. transferred-on: The date/time when the domain object was last transferred.
- o. transferred-code: A reference to the transaction that last transferred the domain object.
- p. host: Up to thirteen (13) host names that are nameservers for the domain to which the domain object relates.
- q. contact-id: Multiple contact-ids that reference the contact records for this domain. Contact-id has the property "type" to denote the type of contact. "Type" can be one of: Registrant, Administrative, Technical, or Billing

An example domain container appears below:

```
<domain fqdn="example.[----]">
  <id>AAA-0001</id>
  <status>ACTIVE</status>
  <owned-by>REG-042</owned-by>
  <ens-authid>[----]-1221</ens-authid>
  <maintainer-url>http://example[----]</maintainer-url>
  <created-code>12345678</created-code>
  <created-on>1-Jul-2001 12:34:56AM</created-on>
  <created-by>REG-042</created-by>
  <renewed-on></renewed-on>
  <expires-on>1-Jul-2003</expires-on>
  <updated-by>42</updated-by>
  <updated-on>1-Jul-2001 12:34:56AM</updated-on>
  <transferred-by></transferred-by>
  <transferred-on></transferred-on>
  <transferred-code></transferred-code>
  <host>dns1.example[----]</host>
  <host>dns2.example[----]</host>
  <contact-id type="Registrant">PER-0001</contact-id>
  <contact-id type="Administrative">PER-0002</contact-id>
  <contact-id type="Technical">PER-0003</contact-id>
  <contact-id type="Billing">PER-0004</contact-id>
</domain>
```

**4. The Host Element.** The host element has the property "fqdn" (the fully qualified name of the host) and is a container consisting of the following elements:

- a. id: Identifier of the host.

- b. owned-by: An identification of the sponsoring registrar of the host. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- c. created-code: A reference to the transaction that created the host object.
- d. created-on: The date/time the host object was originally created.
- e. updated-by: An identification of the registrar that last updated the host object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- f. updated-on: The date/time the host object was last updated.
- g. transferred-by: An identification of the registrar that last transferred the host object. A number uniquely assigned by the IANA designates the sponsoring registrar.
- h. transferred-on: The date/time when the host object was last transferred.
- i. ip-address: Any number of IP addresses associated with this host.

An example host container appears below:

```
<host fqdn="dns1.example[----]">
  <id>HST-0001</id>
  <owned-by>REG-042</owned-by>
  <created-code>12345679</created-code>
  <created-on>1-Jul-2001 12:40:32AM</created-on>
  <updated-by>42</updated-by>
  <updated-on>1-Jul-2001 12:40:32AM</updated-on>
  <transferred-by></transferred-by>
  <transferred-on></transferred-on>
  <ip-address>192.168.1.1</ip-address>
  <ip-address>192.168.122.1</ip-address>
</host>
```

**5. The Contact Element.** The contact element has the property "id" and is a container consisting of the following elements:

- a. name: The name of the contact.
- b. organization: The organization for the contact.
- c. street1: The first part of the street address of the contact.
- d. street2: The second part of the street address of the contact.
- e. street3: The third part of the street address of the contact.

- f. city: The name of the city of the contact.
- g. state-province: The name of the state/province of the contact.
- h. postal-code: The postal/zip code of the contact.
- i. geographic location: The two letter ISO 3166 code for the contact's geographic location.
- j. voice: The voice phone number of the contact in E164a format.
- k. fax: The fax number of the contact in E164a format.
- l. email: The e-mail address of the contact.
- m. owned-by: An identification of the sponsoring registrar of the contact. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- n. created-code: A reference to the transaction that created the contact object.
- o. created-by: An identification of the registrar that created the contact object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- p. created-on: The date/time the contact object was originally created.
- q. updated-by: An identification of the registrar that last updated the contact object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- r. updated-on: The date/time the contact object was last updated.
- s. transferred-by: An identification of the registrar that last transferred the contact object. The sponsoring registrar is designated by a number uniquely assigned by the IANA.
- t. transferred-on: The date/time when the contact object was last transferred.
- u. transferred-code: A reference to the transaction that last transferred the contact object.
- v. status: Contact status.

An example contact container appears below:

```
<contact id="1">  
  <name>John Doe</name>  
  <organization>aol</organization>  
  <street1>1234 East 11th Street</street1>  
  <street2></street2>
```

```
<street3></street3>
<city>New York</city>
<state-province>NY</state-province>
<postal-code>12345</postal-code>
<country>US</country>
<voice>+212.1234567</voice>
<fax>+212.1234568</fax>
<email>jdoe@example[----]</email>
<owned-by>42</owned-by>
<created-code>12345680</created-code>
<created-by>REG-042</created-by>
<created-on>1-Jul-2001 12:42:22AM</created-on>
<updated-by>42</updated-by>
<updated-on>1-Jul-2001 12:42:22AM</updated-on>
<transferred-by></transferred-by>
<transferred-on></transferred-on>
<transferred-code></transferred-code>
<status>ACTIVE</status>
</contact>
```

**6. The Registrar Element.** The registrar element has the property "id" and is a container consisting of the following elements:

- a. password: The password for the registrar.
- b. name: The name of the registrar.
- c. status: The registrar status code.
- d. contact-id: Any number of contact-id associated with this registrar. Contact-id has the property "type" to denote the type of contact. "Type" can be one of: Registrar, Administrative, Technical or Billing

An example registrar container appears below:

```
<registrar id="REG-042">
  <password>registrarrus</password>
  <name>Registrar R Us</name>
  <status>ACTIVE</status>
  <contact-id type="Registrar">PER-0009</contact-id>
  <contact-id type="Administrative">PER-0010</contact-id>
  <contact-id type="Administrative">PER-0011</contact-id>
  <contact-id type="Technical">PER-0012</contact-id>
  <contact-id type="Technical">PER-0013</contact-id>
  <contact-id type="Billing">PER-0014</contact-id>
</registrar>
```

**7. The Transaction Element.** The transaction element has the properties "operation" and "type." "Operation" can be one of: add, modify or delete. "Type" can be one of: domain, host, contact or registrar. The transaction element is a container consisting of elements from the corresponding "type" element. For example, a transaction element with a "type" of "registrar" will have the same set of elements as a Registrar element.

An example transaction container appears below:

```
<transaction operation="modify" type="registrar">
  <password>new password</password>
  <name>Registrar R Us</name>
  <status>ACTIVE</status>
  <contact-id type="Administrative">10</contact-id>
  <contact-id type="Administrative">11</contact-id>
  <contact-id type="Technical">12</contact-id>
  <contact-id type="Technical">13</contact-id>
  <contact-id type="Billing">14</contact-id>
</transaction>
```

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### **Exhibit C**

## **ESCROW TRANSFER PROCESS**

**Deposit Transfer Process.** Registry Operator shall prepare and transfer the Deposit file by the following steps, in sequence:

1. The Reports making up the Deposit will first be created according to the format specification. (See Exhibit B above, "Escrow Deposit Format Specification").
2. The Reports making up the Deposit will be concatenated. The resulting file shall be named according to the following format: "[----]SEQN," where "SEQN" is a four digit decimal number that is incremented as each report is prepared.
3. Next, the Deposit file will be processed by a program (provided by ICANN) that will verify that it complies with the format specification and contains reports of the same date/time (for a Full Deposit), count the number of objects of the various types in the Deposit, and append to the file a report of the program's results.
4. Registry Operator may optionally split the resulting file using the Unix SPLIT command (or equivalent) to produce files no less than 1 GB each (except the final file). If Deposit files are split, a .MDS file (produced with MDSSUM or equivalent) must be included with the split files to isolate errors in case of transfer fault.
5. The Deposit file(s) will then be encrypted using Escrow Agent's public key for PGP and signed using Registry Operator's private key for PGP, both version 6.5.1 or above,



with a key of DH/DSS type and 2048/1024-byte length. (Note that PGP compresses the Deposit file(s) in addition to encrypting it (them).)

The formatted, encrypted and signed Deposit file(s) will be sent, by anonymous file transfer, to Escrow Agent's ftp server within the specified time window.

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## **Exhibit D**

### **ESCROW VERIFICATION PROCEDURES**

**Verification Procedures.** Escrow Agent will verify the format and completeness of each Deposit by the following steps:

1. At the conclusion of the deposit window, all Deposit files will be moved to a not-publicly-accessible directory and the existence and size of each will be noted.
2. Each Deposit file will be decrypted using Escrow Agent's private key for PGP and authenticated using Registry Operator's public key for PGP. (In this step, PGP will also automatically decompress the escrow file).
3. If there are multiple files, they will be concatenated in sequence.
4. Escrow Agent will run a program (to be supplied by ICANN) on the Deposit file (without report) that will split it in to its constituent reports (including the format report prepared by the Registry Operator and appended to the Deposit) check its format, count the number of objects of each type, and verify that the data set is internally consistent. This program will compare its results with the results of the Registry-generated format report, and will generate a Deposit format and completeness report. The program will encrypt the report using ICANN's public key for PGP and signed using Escrow Agent's private key for PGP, both versions 6.5.1 or above, with a key of DH/DSS type and 2048/1024-byte length. (Note that PGP compresses the Deposit file(s) in addition to encrypting it (them).)
5. The decrypted Deposit file will be destroyed to reduce likelihood of data loss to intruders in case of partial security failure.

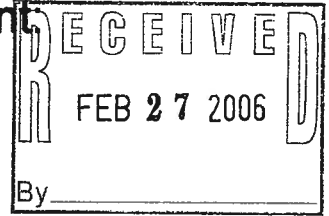
**Distribution of Public Keys.** Each of Registry Operator and Escrow Agent will distribute its public key to the other party (Registry Operator or Escrow Agent, as the case may be) via email to an email address to be specified. Each party will confirm receipt of the other party's public key with a reply email, and the distributing party will subsequently reconfirm the authenticity of the key transmitted. In this way, public key transmission is authenticated to a user able to send and receive mail via a mail server operated by the distributing party. Escrow Agent, Sponsor and ICANN shall exchange keys by the same procedure.

## **Appendix 2**

### **Escrow Agreement**



TLD Sponsorship Agreement  
Attachment 19



## Registry Data Escrow Agreement

This Registry Data Escrow Agreement ("Agreement") is made as of this \_\_\_\_\_ (the "Beginning Date"), by and between **SITA SC ("Sponsor")**, **Afilias Limited ("Registry Operator")**, **Iron Mountain Intellectual Property Management, Inc. ("Escrow Agent")**, and the Internet Corporation for Assigned Names and Numbers ("ICANN"). All capitalized terms not defined herein shall have the meaning set forth in the TLD Sponsorship Agreement dated December 17, 2001 by and between Sponsor and ICANN ("TLD Sponsorship Agreement").

### Recitals

A. Sponsor and ICANN have entered into a TLD Sponsorship Agreement, which requires Sponsor, during the term of the TLD Sponsorship Agreement, to ensure Registry Operator submits certain domain name registration data to a reputable escrow agent to be held in escrow.

B. Sponsor and Registry Operator have entered into a Registry Agreement, which requires Registry Operator, during the term of the Registry Agreement, to submit certain domain name registration data to a reputable escrow agent to be held in escrow.

C. Pursuant to the Registry Agreement and the TLD Sponsorship Agreement, Registry Operator shall, and Sponsor shall ensure that Registry Operator shall, periodically deliver to Escrow Agent an electronic copy of all Registry Data, as detailed in Subsection 3.12 of the TLD Sponsorship Agreement (each such delivery referred to as a "Deposit").

D. Registry Operator, Sponsor and ICANN each desire Escrow Agent to hold each Deposit, and, upon certain events, release any retained Deposits (or a copy of the Deposits) to Sponsor and/or ICANN, in accordance with the terms of this Agreement or as ordered by a court of competent jurisdiction.

Now, therefore, in consideration of the premises and mutual obligations contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

### Agreement

**1. Content of Deposits.** Deposits will be of two kinds: Full Deposits and Incremental Deposits. Each Full Deposit will consist of Registry Data that reflects the current and complete Registry Database. Incremental Deposits will consist of data that reflects all transactions involving the database that are not reflected in the last previous Full Deposit or Incremental Deposit, as the case may be.

**2. Schedule for Deposits.** Registry Operator must create and deliver to Escrow Agent a Full Deposit once each week, according to the schedule specified in Exhibit A of Attachment 18 to the TLD Sponsorship Agreement. Registry Operator must create and deliver to Escrow Agent an Incremental Deposit once each day during which a Full Deposit is not made, according to the schedule specified in Exhibit A of Attachment 18.

**3. Format of Deposits.** The data in each Full Deposit and in each Incremental Deposit shall follow the data format specified in the Escrow Deposit Format Specification (the "Format Specification"), attached as Exhibit B of Attachment 18.

**4. Procedure for Deposits.** Each properly formatted Full Deposit and Incremental Deposit shall be processed and electronically delivered in encrypted form to Escrow Agent according to the transfer process described in Exhibit C of Attachment 18.

**5. Notification of Deposits.** Simultaneous with the delivery to Escrow Agent of any Full or Incremental Deposit, Registry Operator shall deliver to Escrow Agent and Sponsor a written statement (which may be by authenticated e-mail) that includes a copy of the report generated upon creation of the Full or Incremental Deposit by the ICANN-provided software (as described in Exhibit C of Attachment 18) and states that the Full or Incremental Deposit (as the case may be) has been inspected by Registry Operator according to the procedures described in Exhibit C of Attachment 18 and is complete and accurate. Escrow Agent shall notify Sponsor of all Deposits received, within two business days of receipt.

**6. Verification.** Within two business days after receiving each Full or Incremental Deposit, Escrow Agent shall verify the format and completeness of each Deposit by performing the verification procedures specified in Exhibit D of Attachment 18 and shall deliver to Sponsor and ICANN a copy of the verification report generated for each Deposit (which may be by authenticated e-mail). If Escrow Agent discovers that any Deposit fails the verification procedures, Escrow Agent shall notify, including by email and fax, Registry Operator, Sponsor, and ICANN of such nonconformity within forty-eight hours of discovery. Upon notification of such verification failure, Registry Operator shall begin developing modifications, updates, corrections, and other fixes of the Full or Incremental Deposit necessary for the Deposit to pass the verification procedures and shall deliver such fixes to Escrow Agent as promptly as possible. Escrow Agent shall verify the accuracy or completeness of any such corrected Deposit pursuant to the procedures in this Section 6 and shall send Sponsor and ICANN a copy of the successful report within twenty-four hours. The failure of any Full or Incremental Deposit to meet verification procedures and any efforts by Registry Operator to remedy such failure shall not delay the delivery of any subsequent scheduled Full or Incremental

Deposits pursuant to the schedule in Exhibit A of Attachment 18. Escrow Agent shall deliver, on the first business day of each month, (i) a written certification to Sponsor and ICANN that Escrow Agent has performed such verification procedures on each Deposit received during the last month, and (ii) copies of the verification reports generated for each Deposit received during the last month.

## **7. Retention and Confidentiality.**

**7.1 Retention.** Escrow Agent shall hold and maintain the Deposits in a secure, locked, and environmentally safe facility which is accessible only to authorized representatives of Escrow Agent. Escrow Agent shall use commercially reasonable efforts to protect the integrity of the Deposits. Each of Sponsor, ICANN, and Registry Operator shall have the right to inspect Escrow Agent's written records with respect to this Agreement upon reasonable prior notice and during normal business hours.

**7.2 Destruction of Deposits.** At all times, Escrow Agent shall retain the four most recent Full Deposits and all Incremental Deposits after the earliest of those four Full Deposits, all of which must have passed the verification procedures specified in Exhibit D of Attachment 18. Escrow Agent may destroy any Deposits reflecting the Registry Database prior to these four most recent Full Deposits.

**7.3 Confidentiality.** Escrow Agent shall use commercially reasonable efforts to protect the confidentiality of the Deposits. Except as provided in this Agreement, Escrow Agent shall not disclose, transfer, make available, or use any Deposit (or any copies of any Deposit). Should Escrow Agent be put on notice that it is required to disclose any Deposits by statute, rule, regulation, order, or other requirement of a governmental agency, legislative body, court of competent jurisdiction, or binding arbitral body (other than any requirement pursuant to Sections 9.1.6, 11.2, and 13 of this Agreement), Escrow Agent shall notify Registry Operator, Sponsor, and ICANN within seven days or as soon as practicable and reasonably cooperate with Registry Operator, Sponsor, and/or ICANN in any contest of the disclosure. Should any contest prove unsuccessful, Escrow Agent shall not be held liable for any disclosure pursuant to such governmental, legislative, judicial, or arbitral order, statute, rule, regulation, or other requirement.

**8. Duplication.** Escrow Agent may duplicate any Deposit by any commercially reasonable means in order to comply with the terms and provisions of this Agreement, provided that Registry Operator shall bear the expense of such duplication. Alternatively, Escrow Agent, by notice to Registry Operator, may reasonably require Registry Operator to promptly duplicate any Deposit. In the event the Registry Operator is unable or unwilling to bear the expense, the party requesting the copy shall bear the cost.

**9. Release of Deposits.** Within five business days after receipt of any required documents and/or notices specified in this Section 9, Escrow Agent shall deliver (i) a

## TLD Sponsorship Agreement

copy of the Deposit to Sponsor in the event of a release pursuant to any of Sections 9.1.2, or 9.1.5, 9.1.6, 9.1.7 and 9.1.8 or (ii) the Deposit to ICANN in the event of a release pursuant to Sections 9.1.1, 9.1.7, or 9.1.8, or a copy of the Deposit to ICANN in the event of a release pursuant to Section 9.1.4, or (iii) a copy of the Deposit to the party designated in the event of a release pursuant to Section 9.1.3, in the event that the Escrow Agent receives all of the items required by Sections 9.1, 9.2, 9.3, and 9.4 below:

### 9.1 One of the following notices:

9.1.1 A written notice by ICANN that the TLD Sponsorship Agreement has: (i) expired without renewal, pursuant to Subsection 5.1 of the TLD Sponsorship Agreement, or (ii) been terminated, pursuant to Subsection 5.4 of the TLD Sponsorship Agreement; or

9.1.2 A written notice by Sponsor that the Registry Agreement has expired without renewal or been terminated; or

9.1.3 A written notice by Registry Operator, Sponsor, and ICANN requesting Escrow Agent to effect such delivery to Sponsor, ICANN, or replacement escrow agent; or

9.1.4 A written notice by ICANN that it has received no successful verification report from Escrow Agent relating to a Full Deposit reflecting the Registry Database as of any date within the past month; or

9.1.5 A written notice by Sponsor that all of the following have occurred:

9.1.5.1 Sponsor failed, with respect to (a) any Full Deposit or (b) five Incremental Deposits within any calendar month, to receive, within five calendar days after the Deposit's scheduled delivery date, notification of receipt from Escrow Agent; and

9.1.5.2 Sponsor gave notice to Escrow Agent and Registry Operator of that failure; and

9.1.5.3 Sponsor has not, within seven calendar days after the notice under Section 9.1.5.2, received notice from Escrow Agent that the Deposit has or the Deposits have been received; or

9.1.6 A written notice by Sponsor that all of the following have occurred:

9.1.6.1 Sponsor has received notification from Escrow Agent of failed verification of a Full Deposit or of failed verification of five Incremental Deposits within any calendar month; and

9.1.6.2 Sponsor gave notice to Registry Operator of that receipt; and

9.1.6.3 Sponsor has not, within seven calendar days after the notice under Section 9.1.6.2, received notice from Escrow Agent of verification of a remediated version of the Deposit; or

9.1.7 A written notice by Sponsor or ICANN that release of the Deposits is mandated by non-payment of any fees due to Escrow Agent, pursuant to Section 15 of this Agreement; or

9.1.8 A written notice by ICANN or Sponsor that a court, arbitral, legislative, or government agency of competent jurisdiction has issued an order, rule, statute, regulation, or other requirement (a copy of which ICANN or Sponsor has provided to Registry Operator) that mandates the release of the Deposits to ICANN and/or Sponsor; and

9.2 Copies of notices with proof of delivery submitted to Escrow Agent that ICANN, Registry Operator, or Sponsor (whichever gave the notice under Section 9.1) has previously notified the other party(ies) in writing; and

9.3 Written instructions from ICANN, Sponsor, or a replacement escrow agent (see Section 9.1.3) that the Deposits be released and delivered to whichever of them provided such written instructions; and

9.4 A written undertaking by the party(ies) receiving the Deposits (ICANN, Sponsor, or a replacement escrow agent) that the Deposits will be used only as permitted under the terms of the Registry Agreement or the TLD Sponsorship Agreement, as applicable. Upon release of any Deposits to ICANN, Sponsor, or a replacement escrow agent, Escrow Agent shall at the same time deliver to Registry Operator a photostatic copy of the notice it received from Sponsor and/or ICANN under Sections 9.1.1 to 9.1.8, as applicable.

**10. Release of Deposit to Registry Operator.** Escrow Agent shall deliver all Deposits to Registry Operator upon termination of this Agreement in accordance with Sections 14.1 and 14.2.1 of this Agreement.

**11. Procedure After Release.**

**11.1 Right to Use Deposits.** Upon release of any Deposits to Sponsor pursuant to Section 9, Sponsor (or its assignee in accordance with the TLD Sponsorship Agreement) shall immediately have the right to exercise or have exercised all rights in the Deposits necessary to provide registry services, as detailed in the Registry Agreement. Upon release of any Deposits to ICANN pursuant to Section 9, ICANN (or its assignee in accordance with the TLD Sponsorship Agreement)

shall immediately have the right to exercise or have exercised all rights in the Deposits pursuant to the TLD Sponsorship Agreement.

**11.2 Objection Notices.** Upon release of any Deposits to Sponsor pursuant to Sections 9.1.2 or 9.1.5 through 9.1.8, Registry Operator shall have thirty calendar days to notify Escrow Agent and Sponsor in writing (the "Objection Notice") of its objection to the release of the Deposits to Sponsor and request that the issue of entitlement to the Deposits be resolved pursuant to the dispute resolution procedures in the Registry Agreement. Upon release of any Deposits to ICANN pursuant to Sections 9.1.1, 9.1.4, 9.1.7, or 9.1.8, Registry Operator or Sponsor shall have thirty calendar days to notify Escrow Agent and ICANN in writing (the "Objection Notice") of its objection to the release of the Deposits to ICANN and request that the issue of entitlement to the Deposits be resolved pursuant to the dispute resolution procedures in the TLD Sponsorship Agreement. Registry Operator, Sponsor, and ICANN agree to resolve any disputes they may have as between or among themselves under this Agreement according to Section 17.2. The parties agree that (i) Registry Operator and Sponsor shall have no rights (other than pursuant to this Section 11.2) to object to any release of the Deposits, and (ii) the delivery of an Objection Notice and the commencement of Dispute Resolution Procedures shall not delay release of any Deposits to Sponsor and/or ICANN pursuant to Section 9.

**11.3 Dispute-Resolution Procedures.** Registry Operator, Sponsor, and ICANN each agrees that it may not challenge, in proceedings for the resolution of disputes between or among those parties under this Agreement, the resolution of any issues, claims, or defenses that were decided, or which it had a reasonable opportunity and motive to raise, in proceedings to which it was a party under the Registry Agreement or TLD Sponsorship Agreement.

**11.4 Withdrawal of Objection Notice.** A party providing an Objection Notice may, at any time, notify the other parties that it wishes to withdraw its Objection Notice. Upon receipt of notice of such withdrawal, Escrow Agent shall promptly deliver to Sponsor and/or ICANN (as the case may be) any Deposits that have not previously been delivered.

**11.5 Dispute Resolution Decisions.**

11.5.1 If the release of Deposits under Section 9 is determined in dispute-resolution procedures to have been proper, Escrow Agent shall promptly deliver, in accordance with the instructions specified in Section 9.3, any Deposits that have not previously been delivered.

11.5.2 If the release of Deposits under Section 9 is determined in dispute-resolution procedures to have been improper, the party(ies) receiving the Deposits shall promptly return or destroy, at Registry Operator's discretion, the Deposits received under Section 9.



**12. Indemnity.** Registry Operator, Sponsor, and ICANN shall, jointly and severally, indemnify and hold harmless Escrow Agent and each of its directors, officers, agents, employees, members, and stockholders ("Escrow Agent Indemnitees") absolutely and forever, from and against any and all claims, actions, damages, suits, liabilities, obligations, costs, fees, charges, and any other expenses whatsoever, including reasonable attorneys' fees and costs, that may be asserted by a third party against any Escrow Agent Indemnitees in connection with this Agreement or the performance of Escrow Agent or any Escrow Agent Indemnitees hereunder (with the exception of any claims based on the misrepresentation, negligence, or misconduct of Escrow Agent, its directors, officers, agents, employees, contractors, members, and stockholders). Escrow Agent shall likewise indemnify and hold harmless Registry Operator, Sponsor, and ICANN, and each of their respective directors, officers, agents, employees, members, and stockholders ("Indemnitees") absolutely and forever, from and against any and all claims, actions, damages, suits, liabilities, obligations, costs, fees, charges, and any other expenses whatsoever, including reasonable attorneys' fees and costs, that may be asserted by a third party against any Indemnitee in connection with the misrepresentation, negligence, or misconduct of Escrow Agent, its directors, officers, agents, employees, contractors, members, and stockholders.

**13. Interpleader.**

13.1 Escrow Agent may submit any dispute under this Agreement to any court of competent jurisdiction in an interpleader or similar action. Any and all costs incurred by Escrow Agent in connection therewith, including reasonable attorneys' fees and costs, shall be borne equally by each of Registry Operator, Sponsor, and ICANN that are parties to such interpleader or similar action.

13.2 Escrow Agent shall perform any acts ordered by any court of competent jurisdiction, without any liability or obligation to any party hereunder by reason of such act.

**14. Term and Termination.**

14.1 **Term.** The initial term of this Agreement shall be [insert period of at least one year], commencing on the Beginning Date (the "Initial Term"). This Agreement shall be automatically renewed for an additional term of one year ("Additional Term") at the end of the Initial Term and each Additional Term hereunder unless, on or before ninety days prior to the end of the Initial Term or an Additional Term, a party notifies the other parties that it wishes to terminate this Agreement at the end of such term. In the event a party gives the other parties such notice of termination, and Registry Operator, Sponsor, and ICANN cannot agree to resolve, by the end of the then-current term, any disputes regarding the renewal of this Agreement or the establishment of a replacement

escrow agent: (i) Registry Operator, Sponsor, and ICANN shall resolve any such disputes through Subsection 5.9 of the TLD Sponsorship Agreement; (ii) this Agreement shall continue to remain in effect during the resolution of any such disputes; and (iii) Escrow Agent shall have the right to invoice either Registry Operator, Sponsor, or ICANN for the data escrow services provided during this dispute resolution period at the rates listed in Exhibit E to this Agreement.

**14.2 Termination.** This Agreement shall terminate upon the occurrence of any of the following:

14.2.1 Termination of this Agreement by Sponsor and ICANN, upon having delivered to Escrow Agent a written notice signed by Sponsor and ICANN stating their common intent to terminate this Agreement upon ninety days' notice;

14.2.2 Termination of this Agreement by Escrow Agent pursuant to Section 15; or

14.2.3 As provided in Section 14.1.

**15. Fees and Payments.** Registry Operator shall pay to Escrow Agent the applicable fees and charges listed in Exhibit E as compensation for Escrow Agent's services under this Agreement. If Registry Operator fails to pay any fees or charges invoiced by Escrow Agent by the due date(s), Escrow Agent shall give written notice to Registry Operator of non-payment of any such past-due fees hereunder and, in that event, the Registry Operator shall have the right to pay the past-due fee(s) within ten business days after receipt of the notice from Escrow Agent. If Registry Operator fails to pay in full all such past-due fees during the ten-day period, Escrow Agent shall give notice of non-payment of any past-due fees to Sponsor and, in that event, Sponsor shall have the option of paying the past-due fee within ten business days of receipt of such notice from Escrow Agent. Upon payment of the past-due fee by either Registry Operator or Sponsor, this Agreement shall continue in full force and effect. If both Registry Operator and Sponsor fail to pay the past-due fee(s) within the applicable periods under this Section 15, Escrow Agent shall have the right to terminate this Agreement immediately by sending notice of termination to all other parties, and, upon termination, Escrow Agent shall deliver to ICANN all Deposits held by Escrow Agent.

**16. Ownership of Deposit.** Subject to the provisions of the TLD Sponsorship Agreement (including Subsection 3.14) and the Registry Agreement, the parties recognize and acknowledge that ownership of the Deposit during the effective term of this Agreement shall remain with the Registry Operator at all times.

**17. Miscellaneous.**

**17.1 Remedies.** For the purposes of fulfilling its obligations under this Agreement, Escrow Agent may act in good faith reliance on, and shall not be held liable for, any written notice, instruction, instrument, or other writing signed or presented by a person with apparent authority to act on behalf of Registry Operator, Sponsor, or ICANN.

**17.2 Dispute Resolution.** Registry Operator, Sponsor, and ICANN agree to resolve any disputes they may have as between or among themselves under this Agreement, including any objections to release of the Deposits pursuant to Section 9.1, solely pursuant to the dispute-resolution procedures in the TLD Sponsorship Agreement (for disputes involving ICANN) or the dispute resolution procedures in the Registry Agreement (for disputes not involving ICANN).

**17.3 Limitation of Liability.** The parties shall not be liable to each other for special, indirect, incidental, or consequential damages hereunder. As between Sponsor and Registry Operator the liability limitations of the Registry Agreement also apply. As between Sponsor and ICANN the liability limitations of the TLD Sponsorship Agreement also apply. Neither Registry Operator nor ICANN shall be liable to each other for monetary damages under this Agreement. Notwithstanding anything else herein, all liability, if any, whether arising in contract, tort (including negligence) or otherwise of Escrow Agent, shall be limited to the amount equal to one (1) year of fees paid or owed to Escrow Agent under this Agreement.

**17.4 Independent Contractor.** Escrow Agent is an independent contractor and is not an employee or agent of Registry Operator, Sponsor, or ICANN.

**17.5 No Third-Party Beneficiaries.** This Agreement shall not be construed to create any obligation by Registry Operator, Sponsor, ICANN, or Escrow Agent to any non-party to this Agreement, including but not limited to any domain-name holder or registrar.

**17.6 Amendments.** This Agreement shall not be modified or amended except in writing executed by each of the parties.

**17.7 Assignment.** Neither Registry Operator, Sponsor, nor ICANN may assign or transfer this Agreement (by merger, sale of assets, operation of law, or otherwise), except that the rights and obligations of Registry Operator, Sponsor, or ICANN automatically shall be transferred to the assignee of one of those parties' rights and obligations under the Registry Agreement or TLD Sponsorship Agreement, as applicable. Escrow Agent may not assign or transfer this Agreement without the prior written consent of Registry Operator, Sponsor, and ICANN.

**17.8 Entire Agreement.** This Agreement, including all exhibits referenced herein, supersedes all prior discussions, understandings, and agreements

between Escrow Agent and the other parties with respect to the data escrow services. Sponsor and Registry Operator acknowledge and agree that, as between themselves, the Registry Agreement (including all its appendices, exhibits, and other attachments) is intended to co-exist with this Agreement; this Agreement is supplementary to the Registry Agreement; and the Registry Agreement shall control in the event of any conflict between this Agreement and the Registry Agreement. Sponsor and ICANN acknowledge and agree that, as between themselves, the TLD Sponsorship Agreement (including all its attachments and exhibits) is intended to co-exist with this Agreement; this Agreement is supplementary to the TLD Sponsorship Agreement; and the TLD Sponsorship Agreement shall control in the event of any conflict between this Agreement and the TLD Sponsorship Agreement.

**17.9 Counterparts.** This Agreement may be executed in counterparts, each of which when so executed shall be deemed to be an original and all of which when taken together shall constitute one and the same Agreement.

**17.10 Governing Law.** This Agreement shall be construed and enforced in accordance with the laws of the State of California, without regard to its conflicts-of-laws principles. The parties consent and agree that jurisdiction and venue for any legal proceedings relating to this Agreement shall lie with the state and federal courts of Los Angeles County in the State of California.

**17.11 Notices.** All notices, requests, demands or other communications required or permitted to be given or made under this Agreement shall be in writing and shall be delivered by hand, by commercial overnight delivery service which provides for evidence of receipt, by certified mail, return receipt requested, postage prepaid, by facsimile, or by e-mail (e-mail to be followed promptly at receiver's request by a copy delivered by one of the other means of delivery) to the corresponding addresses listed on the signature page of this Agreement. If delivered personally, by commercial overnight delivery service, by facsimile, or by e-mail, the date on which the notice, request, instruction, or document is delivered shall be the date on which delivery is deemed to be made, and if delivered by mail, the date on which such notice, request, instruction, or document is received shall be the date on which delivery is deemed to be made. Any party may change its address for the purpose of this Agreement by notice in writing to the other parties as provided herein.

**17.12 Survival.** The obligation of confidentiality in Section 7, Sections 9, 10, 11, 12, 13, 17.3, and this Section 17.12 shall survive any termination of this Agreement.

**17.13 No Waiver.** No failure on the part of any party hereto to exercise, and no delay in exercising any right, power, or single or partial exercise of any right, power, or remedy by any party will preclude any other or further exercise of that or any other right, power, or remedy. No express waiver or assent by any party to

**TLD Sponsorship Agreement**

**any breach of or default in any term or condition of this Agreement shall constitute a waiver of or an assent to any succeeding breach of or default in the same or any other term or condition.**

**(Space to the end of this page is intentionally left blank – signature page follows.)**

TLD Sponsorship Agreement

IN WITNESS WHEREOF each of the parties has caused its duly authorized officer to execute this Agreement as of the date and year first above written.

Escrow Agent

Iron Mountain Intellectual Property Management

2100 Norcross Parkway, Suite 150

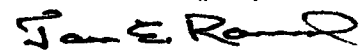
Norcross, GA. 30071

Phone: 770-239-9200

Fax: 770-239-9201

By:   
Lavoska Barton, Jr.

Vice President Service Delivery

Approved as to Form and Content:  
Iron Mountain Legal Department  
  
James E. Raymond, Contracts Specialist  
Date: Feb. 13, 2006

Registry Operator

Afilias Limited

Office 110, 52 Broomhill Road

Tallaght, Dublin 24

Ireland

Phone: +353.1.431.0511

Fax: +353.1.431.0557

Attn. Legal Department

By:   
Hal Lubsen  
Chief Executive Officer

Sponsor

Societe Internationale de Telecommunications Aeronautiques, a Belgian co-operative corporation registered with the Belgian Registrar of companies number B 217.548 ("SITA SC")

Avenue Henri-Matisse 14

1140 Brussels

Belgium

Phone: +41 22 747 6000

Fax: +41 22 747 6166

Attn. General Counsel

TLD Sponsorship Agreement

By: 

~~Brijdeep Sahi~~  
~~VP MICANN - SAIA~~

~~4676 Admiralty Way~~

~~Suite 330~~

~~Marina del Rey, CA 90292~~

~~Phone: 1-310-823-9358~~

~~Fax: 1-310-823-8649~~

By: 

~~M. Stuart Lynn~~

~~President and CEO - LEA, INC~~

John Jeffrey  
General Counsel & Secretary  
ICANN

## **Appendix 3**

### **Zone File Access Agreement**

#### **1. Parties**

The User named in this Agreement hereby contracts with \_\_\_\_\_ ("Registry Operator") for a non-exclusive, non-transferable, limited right to access an Internet host server or servers designated by Registry Operator from time to time, and to transfer a copy of the described Data to the User's Internet host machine specified below, under the terms of this Agreement. Upon execution of this Agreement by Registry Operator, Registry Operator will return a copy of this Agreement to you for your records with your UserID and Password entered in the spaces set forth below.

#### **2. User Information**

(a) User: \_\_\_\_\_

(b) Contact Person: \_\_\_\_\_

(c) Street Address: \_\_\_\_\_

(d) City, State or Province: \_\_\_\_\_

(e) Country and Postal Code: \_\_\_\_\_

(f) Telephone Number: \_\_\_\_\_  
(including area/country code)

(g) Fax Number: \_\_\_\_\_  
(including area/country code)

(h) E-Mail Address: \_\_\_\_\_

(i) Specific Internet host machine that will be used to access Registry Operator's server to transfer copies of the Data:

Name: \_\_\_\_\_

IP Address: \_\_\_\_\_

(j) Purpose(s) for which the Data will be used: During the term of this Agreement, you may use the data for any legal purpose not prohibited under Section 4 below. You may incorporate some or all of the Data in your own products or services, and distribute those products or services for a purpose not prohibited under Section 4 below.



### **3. Term**

This Agreement is effective for a period of three (3) months from the date of execution by Registry Operator (the "Initial Term"). Upon conclusion of the Initial Term this Agreement will automatically renew for successive three-month renewal terms (each a "Renewal Term") until terminated by either party as set forth in Section 12 of this Agreement or one party provides the other party with a written notice of termination at least seven (7) days prior to the end of the Initial Term or the then current Renewal Term.

NOTICE TO USER: CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS. YOU MAY USE THE USER ID AND ASSOCIATED PASSWORD PROVIDED IN CONJUNCTION WITH THIS AGREEMENT ONLY TO OBTAIN A COPY OF .AERO TOP-LEVEL DOMAIN ("TLD") ZONE FILES, AND ANY ASSOCIATED ENCRYPTED CHECKSUM FILES (COLLECTIVELY THE "DATA"), VIA THE FILE TRANSFER PROTOCOL ("FTP") OR THE HYPERTEXT TRANSFER PROTOCOL ("HTTP") PURSUANT TO THESE TERMS.

### **4. Grant of Access**

Registry Operator grants to you a non-exclusive, non-transferable, limited right to access an Internet host server or servers designated by Registry Operator from time to time, and to transfer a copy of the Data to the Internet host machine identified in Section 2 of this Agreement no more than once per 24 hour period using FTP or HTTP for the purposes described in this Section 4. You agree that you will:

(a) use this Data only for lawful purposes but that under no circumstances will you use this Data to: (1) allow, enable, or otherwise support the transmission by e-mail, telephone, or facsimile of mass unsolicited, commercial advertising or solicitations to entities other than your own existing customers; or (2) enable high volume, automated, electronic processes that send queries or data to the systems of Registry Operator or any ICANN-Accredited Registrar, except as reasonably necessary to register domain names or modify existing registrations. Registry Operator reserves the right, with the approval of the Internet Corporation for Assigned Names and Numbers ("ICANN"), to specify additional specific categories of prohibited uses by giving you reasonable written notice at any time and upon receiving such notice you shall not make such prohibited use of the Data you obtain under this Agreement.

(b) Not use this Data, nor permit this Data to be used to harass, annoy, interrupt, disrupt, or interfere in the normal business operations or any registrant.

(c) Not to use this Data, nor permit this Data to be used for any marketing purposes whatsoever.

(d) Copy the Data you obtain under this Agreement into a machine-readable or printed form only as necessary to use it in accordance with this Agreement in support of your use of the Data.

(e) Comply with all applicable laws and regulations governing the use of the Data.

(f) Not distribute the Data you obtained under this Agreement or any copy thereof to any other party without the express prior written consent of Registry Operator, except that you may redistribute the Data insofar as it has been incorporated by you into a value-added product or service that does not permit the extraction of a substantial portion of the Data from the value-added product or service, provided you prohibit the recipient of the Data from using the Data in a manner contrary to Section 4(a).

(g) Take all reasonable steps to protect against unauthorized access to, use, and disclosure of the Data you obtain under this Agreement.

## **5. Fee**

You agree to remit in advance to Registry Operator a quarterly fee of \$0 (USD) for the right to access the files during either the Initial Term or Renewal Term of this Agreement. Registry Operator reserves the right to adjust, with the approval of ICANN, this fee on thirty days prior notice to reflect a change in the cost of providing access to the files.

## **6. Proprietary Rights**

You agree that no ownership rights in the Data are transferred to you under this Agreement. You agree that any copies of the Data that you make will contain the same notice that appears on and in the Data obtained under this Agreement.

## **7. Method of Access**

Registry Operator reserves the right, with the approval of ICANN, to change the method of access to the Data at any time. You also agree that, in the event of significant degradation of system processing or other emergency, Registry Operator may, in its sole discretion, temporarily suspend access under this Agreement in order to minimize threats to the operational stability and security of the Internet.

## **8. No Warranties**

The Data is being provided "as-is." Registry Operator disclaims all warranties with respect to the Data, either expressed or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, and non-infringement of third party rights. Some jurisdictions do not allow the exclusion of implied warranties or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

## **9. Severability**

In the event of invalidity of any provision of this Agreement, the parties agree that such invalidity shall not affect the validity of the remaining provisions of this Agreement.

## **10. No Consequential Damages**

In no event shall Registry Operator be liable to you for any consequential, special, incidental or indirect damages of any kind arising out of the use of the Data or the termination of this Agreement, even if Registry has been advised of the possibility of such damages.

## **11. Governing Law**

This Agreement shall be governed and construed in accordance with the laws of Ireland. You agree that any legal action or other legal proceeding relating to this Agreement or the enforcement of any provision of this Agreement shall be brought or otherwise commenced in the courts of Ireland, or the federal courts of the Eastern District of Pennsylvania, USA. You expressly and irrevocably agree and consent to the personal jurisdiction and venue of the courts located in Ireland and the Eastern District of Pennsylvania (and each appellate court located therein) for matters arising in connection with this Agreement or your obtaining, use or distribution of the Data. The United Nations Convention on Contracts for the International Sale of Goods is specifically disclaimed.

## **12. Termination**

You may terminate this Agreement at any time by erasing the Data you obtained under this Agreement from your Internet host machine together with all copies of the Data and providing written notice of your termination to Registry Operator at [**address of Registry Operator**]. Registry Operator has the right to terminate this Agreement immediately if you fail to comply with any term or condition of this Agreement. You agree upon receiving notice of such termination of this Agreement by Registry Operator or expiration of this Agreement to erase the Data you obtained under this Agreement together with all copies of the Data.

## **13. Definition**

"Data" means all data contained in a DNS zone file for the Registry TLD as provided to TLD nameservers on the Internet.

## **14. Entire Agreement**

This is the entire agreement between you and Registry Operator concerning access and use of the Data, and it supersedes any prior agreements or understandings, whether written or oral, relating to access and use of the Data.

[Name of Registry Operator]

User:

By:  
(sign)

By:  
(sign)

Name:  
(print)

Name:  
(print)

Title:

Title:

Date:

Date:

**ASSIGNED USERID AND PASSWORD**

(To be assigned by Registry Operator upon execution of this Agreement):

USERID:

PASSWORD:

## Appendix 4

### Registry Operator's Monthly Report

Registry Operator shall provide the following information in its monthly reports. Reports shall be submitted via email to <registry-reports@icann.org>. ICANN shall use reasonable commercial efforts to preserve the confidentiality of the information reported until three months after the end of the month to which the report relates.

**1. Accredited Registrar Status.** State the number of registrars in each of the following three categories: (1) operational, (2) ramp-up (registrars that have received a password for access to OT&E), and (3) pre-ramp-up (registrars that have requested access, but have not yet entered the ramp-up period).

**2. Service Level Agreement Performance.** Compare Service Level Agreement requirements with actual performance measures for the reporting month.

**3. TLD Zone File Access Activity.** State the total number of zone file access passwords at end of the reporting month.

**4. Completed System Software Releases.** Describe significant releases during the reporting month, including release name, features, and completion date.

**5. Whois Service Activity.** State the number of Whois queries during the reporting month.

**6. Total Number of Transactions by Subcategory by Month.** State the total number of transactions during the reporting month, in the following subcategories: adds, deletes, modifies, checks, renews, transfers, restores.

**7. Daily Transaction Range.** Tabulate the number of total daily transactions. The range of transaction volume should be shown for each month, along with the average daily transaction volume.

**8. Per-Registrar Activity Report.** This report shall be transmitted to ICANN electronically in comma or pipe separated-value format, using the following fields per registrar:

Field #	Field Name	Notes
01	registrar-name	registrar's full corporate name
02	iana-id	<a href="http://www.iana.org/assignments/registrar-ids">http://www.iana.org/assignments/registrar-ids</a>
03	total-domains	total domains under sponsorship
04	total-nameservers	total nameservers registered
05	net-adds-1-yr	domains successfully added (and not deleted within the add grace period)

06	net-adds-2-yr	number of domains successfully registered with an initial term of two years
07	net-adds-3-yr	number of domains successfully registered with an initial term of three years
08	net-adds-4-yr	etc.
09	net-adds-5-yr	" "
10	net-adds-6-yr	" "
11	net-adds-7-yr	" "
12	net-adds-8-yr	" "
13	net-adds-9-yr	" "
14	net-adds-10-yr	" "
15	net-renews-1-yr	domains renewed either automatically or by command (and not deleted within the renew grace period)
16	net-renews-2-yr	number of domains successfully renewed with a new renewal period of two years
17	net-renews-3-yr	number of domains successfully renewed with a new renewal period of three years
18	net-renews-4-yr	etc.
19	net-renews-5-yr	" "
20	net-renews-6-yr	" "
21	net-renews-7-yr	" "
22	net-renews-8-yr	" "
23	net-renews-9-yr	" "
24	net-renews-10-yr	" "
25	transfer-gaining-successful	transfers initiated by this registrar that were ack'd by the other registrar – either by command or automatically
26	transfer-gaining-nacked	transfers initiated by this registrar that were n'acked by the other registrar
27	transfer-losing-successful	transfers initiated by another registrar that this registrar ack'd – either by command or automatically
28	transfer-losing-nacked	transfers initiated by another registrar that this registrar n'acked
29	transfer-disputed-won	number of transfer disputes in which this registrar prevailed
30	transfer-disputed-lost	number of transfer disputes this registrar lost
31	transfer-disputed-nodecision	number of transfer disputes involving this registrar with a split or no decision
32	deleted-domains-grace	domains deleted within the add grace period
33	deleted-domains-nograce	domains deleted outside the add grace period
34	restored-domains	domain names restored from redemption period
35	restored-noreport	total number of restored names for which the registrar failed to submit a restore report

## Appendix 5

### Whois Specifications

#### Public Whois Specification

##### **RFC954-Conformant Whois**

The standard Whois service is intended as a lookup service for registries, registrars, registrants, as well as for other individuals and businesses that wish to query details of domain names or nameservers stored in the registry. The standard Whois service will provide a central location for all authoritative .aero TLD data. The registry provides a front-end web interface to allow convenient user access to the Whois service.

The RFC954-conformant Whois service will be engineered to handle moderate transaction load and be integral to the standard suite of Registry Services. The Whois service will return a single response per domain name or nameserver query. The RFC954-conformant Whois service will conform to the requirements of Appendix 5.

The RFC954-conformant service provided by the registry will have the following features:

- Standard protocol accessible over port 43.
- Batch-style or near real time updates.
- Additional fields capability.
- Whois Service Data Elements

##### **Whois Service Data Elements**

The RFC954-conformant service will include the following data elements:

- The name of the domain name registered;
- The IP addresses of the primary nameserver and secondary nameserver(s) of the name registered, if applicable, i.e. nameserver has a .aero name.;
- The corresponding names of those nameservers;
- The identity of the sponsoring registrar;
- The ENS\_AuthId identifying the authorization of the registration, (this enables tracking of registrations performed using the same ENS\_AuthId);
- The original creation date and term of the registration;
- The name, postal address, e-mail address, voice telephone number, and (where available) fax number of the domain name registrant;
- The name, postal address, e-mail address, voice telephone number, and (where available) fax number of the technical contact for the name registered;

- The name, postal address, e-mail address, voice telephone number, and (where available) fax number of the administrative contact for the name registered; and
- The Maintainer URL (email or website). The maintainer is a person that has been designated by the Registrar for the registration of the domain (for example a reseller, could also depend on the registrant).

### **Minimum Data Update Frequency**

The Registry Operator shall make reasonable efforts to update the data continuously as requests are processed, in a matter of seconds or minutes. The typical update cycle will be 30 seconds but may be different depending on performance considerations. The Registry Operator shall ensure that records in the Whois server are updated no later than 24 hours after the completion of the registration or modification transaction with the registrar.

### **Additional Fields Capability**

If necessary, .aero may introduce after a 6 to 12 month period of operational stability some additional fields to the list of Whois fields. Those fields will be preceded and identified by appropriate tags.

### **Privacy Capability**

The Sponsor may introduce the optional ability to associate privacy labels to a record in the Registry Database. These fields would appear in an "additional information" section of the Whois data. The maximum number of custom fields allowed per record is yet to be determined.

The privacy label capability allows certain data to be associated with an indication of any special disclosure or handling restrictions.

### **Query Control - Object Type Control**

The following keywords restrict a search to specific object type:

Domain: Search only by domain objects. The input string is searched in the Name field.

Contact: Search only contact objects. The input string is searched in the ID field.

Nameserver: Search only by nameserver objects. The input string is searched in the nameserver field or the IP address field.

Registrar: Search only registrar objects. The input string is searched in the Name field.

By default, if no object type control is specified, then the Name field of the Domain object is searched.



## Whois Output Fields

### Domain Record:

A Whois query that results in domain information will return the following fields from the Domain object and the associated data from host and contact objects. This set of data is also referred to as the Domain Record.

Domain ID  
Domain Name  
Domain Status  
Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)  
ENS\_AuthID  
Registrant, Administrative, Technical and Billing Contact Information including  
    Contact ID  
    Contact Name  
    Contact Organization  
    Contact Address, City, State/Province, Country  
    Contact Postal Code  
    Contact Phone, Fax, E-mail  
Maintainer URL  
Names of Nameservers associated with this domain  
Created by Registrar <Registrar Name> (IANA-assigned identifier)  
Last Updated by Registrar <Registrar Name> (IANA-assigned identifier)  
Last Transferred Date  
Additional fields (Sponsor specified, will be defined later, if required)  
Domain Registration Date  
Domain Expiration Date  
Domain Last Updated Date

### Nameserver Record:

Nameserver ID  
Nameserver name  
Currently Associated (true/false)  
Nameserver status  
IP addresses associated (if applicable)  
Created by Registrar <Registrar Name> (IANA-assigned identifier)  
Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)  
Last Updated by Registrar <Registrar Name> (IANA-assigned identifier)  
Created Date  
Last Updated Date  
Last Transferred Date  
Additional fields (Sponsor specified, will be defined later, if required)

### **Contact Record:**

A Whois query that results in contact information will return the following. This set of information is referred to as the Contact Record.

Contact ID  
Contact Name  
Contact Organization  
Contact Address, City, State/Province, Country + 3 street fields  
Contact Postal Code  
Contact Phone, Fax, E-mail  
Contact Registration Date  
Contact Last Updated Date  
Currently Associated  
Contact Status  
Additional fields (Sponsor specified)  
Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)  
Created by Registrar <Registrar Name> (IANA-assigned identifier)  
Last Transferred Date

### **Registrar Record:**

A Whois query that results in registrar information will return the following. This set of information is referred to as the Registrar Record.

Registrar ID <Registrar Name> (IANA-assigned identifier)  
Registrar Name  
Registrar Status  
Registrar Address, City, State/Province, Country  
Registrar Postal Code  
Registrar Phone, Fax, E-mail  
Registrar Administrative Contacts  
Registrar Technical Contacts  
Registrar Billing Contacts

### **Sample Whois Output**

This section provides sample output from the Whois server for each type of Registry Object: Domain, Contact, Nameserver, and Registrar. The output is structured as key/value pairs, which simplifies machine-readability. In the Input section, the quoted string represents the string actually passed to the server in the request packet.

### **Domain Record:**

**Input:** whois "domain = sita.aero"

**Output:** Domain ID: AAA-0001

Domain Name: SITA.AERO  
Sponsoring Registrar: SITA (REG-01)  
ENS\_AuthId : AERO-123456789  
Domain Status: ACTIVE  
Registrant ID: PER-00001  
Registrant Name: ANDREW CHARLTON  
Registrant Organization: SITA, ICN  
Registrant Address: 1234 MAIN STREET  
Registrant City: GENEVA  
Registrant State/Province: A  
Registrant Country: SWITZERLAND  
Registrant Postal Code: 1234  
Registrant Phone Number: +41-22-747-6704  
Registrant Facsimile Number: +41-22-747-6212  
Registrant Email: CHARLTON@SITA.AERO  
Admin ID: PER-00002  
Admin Name: ANDREW CHARLTON  
Admin Organization: SITA, INC.  
Admin Address: 26 CHEMIN DA JOINVILLE  
Admin City: GENEVA  
Admin State/Province: A  
Admin Country: SWITZERLAND  
Admin Postal Code: 1234  
Admin Phone Number: +41-22-747-6704  
Admin Facsimile Number: +41-22-747-6212  
Admin Email: CHARLTON@SITA.AERO  
Tech ID: PER-00002  
Tech Name: ANDREW CHARLTON  
Tech Organization: SITA, INC  
Tech Address: 26 CHEMIN DA JOINVILLE  
Tech City: GENEVA  
Tech State/Province: A  
Tech Country: SWITZERLAND  
Tech Postal Code: 1234  
Tech Phone Number: +41-22-747-6704  
Tech Facsimile Number: +41-22-747-6212  
Tech Email: CHARLTON@SITA.AERO  
Billing ID: PER-00002  
Billing Name: ANDREW CHARLTON  
Billing Organization: SITA, INC.  
Billing Address: 26 CHEMIN DA JOINVILLE  
Billing City: GENEVA  
Billing State/Province: A  
Billing Country: SWITZERLAND  
Billing Postal Code: 1234  
Billing Phone Number: +41-22-747-6704

Billing Facsimile Number: +41-22-747-6212  
Billing Email: CHARLTON@SITA.AERO  
Name Server: NIC.AERO.ORG  
Name Server: WWW.ICOM.ORG  
Maintainer: SPECIALCARE@RESELLER.COM  
Created By: SITA (REG-02)  
Updated By: SITA (REG-01)  
Created On: 2002-01-02  
Expires On: 2004-01-02  
Updated On: 2002-03-02  
Transferred On: 2002-03-02

### **Nameserver Record:**

**Input:** whois "nameserver nic.sita.aero"

or

whois "nameserver 130.242.24.6"

**Output:** Nameserver ID: HST-1

Nameserver name: NIC.SITA.AERO

Currently Associated (true/false):T

Nameserver status: ACTIVE

IP addresses associated: 130.242.24.6

Sponsoring Registrar: SITA (REG-01)

Created By: SITA (REG-02)

Updated By: SITA (REG-01)

Created On: 2002-01-02

Updated On: 2002-03-02

Transferred On: 2002-03-02

Additional fields (Sponsor specified, will be defined later, if required)

### **Contact Record:**

**Input:** whois "contact = PER-00002"

**Output:** Contact ID: PER-00002

Name: ANDREW CHARLTON

Organization: SITA, INC

Address: 26 CHEMIN DA JOINVILLE

City: GENEVA

State: A

Country: SWITZERLAND

Postal Code: 1234

Phone Number: +41-22-747-6704

Facsimile Number +41-22-747-6212

E-mail: CHARLTON@SITA.AERO

Status: Active

Sponsoring Registrar: SITA (REG-01)

Created By: SITA (REG-01)  
Created On: 2002-01-02  
Updated On: 2002-01-02  
Transferred On: 0000-00-00

**Registrar Record:**

**Input:** whois "registrar SAMPLE"  
**Output:** Registrar ID: SITA (REG-01)  
Registrar Name: SAMPLE  
Registrar Status: ACTIVE  
Registrar Address 1: 123 Some Street  
Registrar Address 2:  
Registrar City: Acity  
Registrar State/Province: RE  
Registrar Country: CC  
Registrar Postal Code: 12345  
Registrar Phone: +11-11-1111-1111  
Registrar Fax: +22-22-2222-2222  
Registrar E-mail: jdoe@sample.tld  
Admin Contact ID: PER-00003  
Tech Contact ID: PER-00004  
Billing Contact Name: PER-00005

Whois Provider Data Specification

Sponsor shall ensure Registry Operator provides bulk access to up-to-date data concerning domain name and nameserver registrations maintained by Registry Operator in connection with the Sponsored TLD on a daily schedule, only for purposes of providing free public query-based access to up-to-date data concerning domain name and nameserver registrations in multiple TLDs, to a party designated from time to time in writing by ICANN (the "Designated Recipient"). Any agreement between ICANN and a Designated Recipient for the license of such data (a "Whois License Agreement") will provide Sponsor with the right to enforce the Designated Recipient's obligations under this Appendix and the Whois License Agreement directly against the Designated Recipient, whether through being made a party to or third-party beneficiary of such agreement or through such other means as may be appropriate. In addition, any Whois License Agreement will include the following provisions governing the use of such data by the Designated Recipient:

1. The Designated Recipient shall only use the data provided by the Registry Operator for the purpose of providing free public query-based Whois access as described in Subsection 3.1(c)(v) of the TLD Sponsorship Agreement (including Appendix S, Part 5, as it may be amended from time to time). The Designated Recipient may not use such data for any other purpose.

2. The Designated Recipient shall use best efforts to implement any corrections to the data provided by the Registry Operator as soon as practicable.
3. The Designated Recipient must take such technical and organizational security measures as are, at a minimum, equivalent to those implemented by the Registry Operator with respect to such data.
4. Except for providing free public query-based access according to item 1 above, the Designated Recipient shall not transfer the data to any third party for any purpose except in the event that such third party becomes bound in the same manner as a Designated Recipient by the provisions of this Appendix and the Whois License Agreement.

The procedures for providing access, and the specification of the content and format of this data, will be as stated below, until changed according to the TLD Sponsorship Agreement. This Appendix is subject to change by agreement of Sponsor and ICANN during the design process as well as during the IETF standards process. In addition, Sponsor agrees to require Registry Operator to implement changes to this Appendix specified by ICANN to conform to the IETF provreg working group's protocol specification no later than 135 days after the IETF specification is adopted as a Proposed Standard [RFC 2026, section 4.1.1]. Accordingly, the following provides the target architecture and initial functionality.

#### **A. Procedures for Providing Access**

Sponsor shall ensure Registry Operator prepares (i) full data sets for one day of each week (the day to be designated by ICANN) and (ii) incremental data sets for all seven days of each week. Full and incremental data sets shall be up-to-date and coherent as of 1200 UTC on the day to which they relate. Until a different day is designated by ICANN, the full data sets will be prepared for Sundays. (Note that on the ICANN-designated day both an incremental and a full data set are prepared.)

**1. Preparation of Files Containing Data Sets.** Each full and incremental data set consists of an XML document meeting the content and format requirements of Parts B and C of this document. Once the XML document is generated, the following preparation steps will be performed:

- a. The XML document will be placed in a file named according to the following convention:

For full data sets: "wfYYMMDD" where "YYMMDD" is replaced with the date (YY=last two digits of year; MM=number of month; DD=day; in all cases a single-digit number should be left-padded with a zero).

For incremental data sets: "wiYYMMDD" where "YYMMDD" follows the same format.

b. The Registry Operator may optionally split the document using the Unix SPLIT command (or equivalent) to produce files no less than 1GB each (except the final file). If files are split, an MD5 file (produced with MD5SUM or equivalent) must be included with the resulting files to isolate errors in case of transfer fault. The Registry Operator may optionally compress the document using the Unix GZIP command (or equivalent) to reduce the file size.

c. The file(s) will then be encrypted and signed using PGP, version 6.5.1 or above, with a key of DH/DSS type and 2048/1024-byte length. (Note that PGP compresses the escrow file in addition to encrypting it.) The Data Recipient's public key will be used for the encryption and the Registry Operator's private key will be used for the signature. Public keys will be exchanged between the Registry Operator and the Designated Recipient by e-mail, physical delivery of floppy diskettes, or other agreed means.

**2. Transmission of Full Data Sets.** Once prepared, full data sets will be provided either by the procedures for incremental data sets described in item A(3) below or, at the option of either the Registry Operator or the Designated Recipient, by writing the full data set to DAT tape (or other media mutually agreed by Registry Operator and the Designated Recipient) and sending it to the Designated Recipient by expedited delivery service (such as FedEx or DHL). If sent by expedited delivery service, the full data set will be scheduled for arrival no later than the second calendar day following the day to which the full backup relates.

**3. Transmission of Incremental Data Sets.** To permit the transmission of incremental data sets, Sponsor shall ensure Registry Operator makes them available for download by the Designated Recipient by Internet File Transfer Protocol. Incremental data sets will be made available for download no later than 2000 UTC on the day to which they relate.

## **B. Content**

The data sets (whether full or incremental) will consist of four types of objects:

**1. Domain Objects.** One type of object is the domain object, which corresponds to a single Registered Name. Each domain object includes the following data:

Domain ID

Domain Name

Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)

Domain Status

ENS\_AuthId

Registrant, Administrative, Technical and Billing Contact Information (references to appropriate contact objects)

Maintainer URL

Names of Nameservers associated with this domain

Created by Registrar <Registrar Name> (IANA-assigned identifier)

Last Updated by Registrar (IANA-assigned identifier)

Last Transferred Date  
Additional fields (Sponsor specified)  
Domain Registration Date  
Domain Expiration Date  
Domain Last Updated Date

2. **Nameserver Objects.** A second type of object is the nameserver object, which corresponds to a single registered nameserver. The nameserver object includes the following data:

Nameserver ID  
Nameserver Name  
IP Addresses associated  
Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)  
Created by Registrar <Registrar Name> (IANA-assigned identifier)  
Nameserver Last Updated by Registrar <Registrar Name> (IANA-assigned identifier)  
Created Date  
Last Updated Date  
Last Transferred Date

3. **Contact Objects.** A third type of object is the contact object, which corresponds to a single contact (whether registrant, administrative, technical, or billing contact). The contact object includes the following data:

Contact ID  
Contact Name  
Contact Organization  
Contact Address, City, State/Province, Country  
Contact Postal Code  
Contact Phone, Fax, E-mail  
Contact Registration Date  
Contact Last Updated Date  
Currently Associated  
Contact Status  
Additional fields (Sponsor specified)  
Sponsoring Registrar <Registrar Name> (IANA-assigned identifier)  
Created Registrar <Registrar Name> (IANA-assigned identifier)  
Last Transferred Date

4. **Registrar Object.** The final type of object corresponds to a single registrar. It includes the following data:

Registrar ID <Registrar Name> (IANA-assigned identifier)  
Registrar Name  
Registrar Status  
Registrar Address, City, State/Province, Country



Registrar Postal Code  
Registrar Phone, Fax, E-mail  
Registrar Administrative Contacts  
Registrar Technical Contacts  
Registrar Billing Contacts

**5. Objects Contained in Full and Incremental Data Sets.** Full data sets include one domain object for each Registered Name within the Sponsored TLD; and nameserver, contact, and registrar objects for each nameserver, contact, and registrar referred to in any domain object. Incremental data sets consist of (a) those of the objects constituting a full data set that have been added or updated since the last incremental data set and (b) notations of deletion of any objects since the last incremental data set.

### C. Format

Full and incremental data sets will be XML version 1.0, UTF-8 encoded documents conforming to the following document type definition:

```
<!DOCTYPE whois-data [  
  <!ELEMENT whois-data (domain*, del-domain*, nameserver*, del-nameserver*,  
  contact*, del-contact*, registrar*, del-registrar*) >  
  <!-- del-domain, del-nameserver, del-contact, and del-registrar child elements are only  
  meaningful where the attribute type= "Incremental" -->  
  <!ATTLIST whois-data  
    tld NMTOKEN #FIXED "aero"  
    date CDATA #REQUIRED  
    type (Full | Incremental)  
    version CDATA #FIXED "1.0" >  
  <!ELEMENT domain (name, url)>  
  <!ATTLIST domain  
    dom-id ID #REQUIRED  
    registrar-id IDREF #REQUIRED  
    registrant-id IDREF #REQUIRED  
    ENS_AuthId IDREF #REQUIRED  
    admin-id IDREF #REQUIRED  
    tech-id IDREF #REQUIRED  
    billing-id IDREF #REQUIRED  
    nameserver-id IDREFS #IMPLIED  
    status (NEW | ACTIVE | INACTIVE | HOLD | LOCK | CLIENT-HOLD | CLIENT-  
  LOCK | PENDING-TRANSFER | PENDING-DELETE)  
    created-by IDREF #REQUIRED  
    updated-by IDREF #REQUIRED  
    cre-date CDATA #REQUIRED  
    exp-date CDATA #REQUIRED  
    upd-date CDATA #REQUIRED  
    xfer-date CDATA #REQUIRED>
```

```
<!ELEMENT del-domain EMPTY >
<!--the presence of this element in an incremental data set indicates that the domain has
been deleted since the last incremental data set -->
<!ATTLIST del-domain
  dom-id ID #REQUIRED >
<!ELEMENT nameserver (name, ip, ip+) >
<!ATTLIST nameserver
  nameserver-id ID #REQUIRED
  registrar-id IDREF #REQUIRED
  created-by IDREF #REQUIRED
  updated-by IDREF #REQUIRED
  cre-date CDATA #REQUIRED
  upd-date CDATA #REQUIRED
  xfer-date CDATA #REQUIRED >
<!ELEMENT del-nameserver EMPTY >
<!--the presence of this element in an incremental data set indicates that the nameserver
has been deleted since the last incremental data set -->
<!ATTLIST del-nameserver
  nameserver-id ID #REQUIRED >
<!ELEMENT contact (name, org, address, post-code, country, phone, fax-, e-mail) >
<!ATTLIST contact
  contact-id ID #REQUIRED
  registrar-id IDREF #REQUIRED
  created-by IDREF #REQUIRED
  updated-by IDREF #REQUIRED
  cre-date CDATA #REQUIRED
  upd-date CDATA #REQUIRED
  xfer-date CDATA #REQUIRED >
<!ELEMENT del-contact EMPTY >
<!--the presence of this element in an incremental data set indicates that the contact has
been deleted since the last incremental data set -->
<!ATTLIST del-contact
  contact-id ID #REQUIRED >
<!ELEMENT registrar (reg-status, url) >
<!ATTLIST registrar
  registrar-id ID #REQUIRED
  contact-id IDREF #REQUIRED
  admin-id IDREFS #REQUIRED
  tech-id IDREFS #REQUIRED
  billing-id IDREFS #REQUIRED
  cre-date CDATA #REQUIRED
  upd-date CDATA #REQUIRED >
<!ELEMENT del-registrar EMPTY >
<!--the presence of this element in an incremental data set indicates that the registrar has
been deleted since the last incremental data set -->
<!ATTLIST del-registrar
```

```

    registrar-id ID #REQUIRED >
    <!ELEMENT name (#PCDATA) >
    <!ELEMENT ip (#PCDATA) >
    <!ELEMENT org (#PCDATA) >
    <!ELEMENT address (#PCDATA) >
    <!ELEMENT post-code (#PCDATA) >
    <!ELEMENT country EMPTY >
    <!ATTLIST country cc (AF | AL | DZ | AS | AD | AO | AI | AQ | AG | AR | AM | AW |
    AU | AT | AZ | BS | BH | BD | BB | BY | BE | BZ | BJ | BM | BT | BO | BA | BW | BV |
    BR | IO | BN | BG | BF | BI | KH | CM | CA | CV | KY | CF | TD | CL | CN | CX | CC | CO
    | KM | CG | CD | CK | CR | CI | HR | CU | CY | CZ | DK | DJ | DM | DO | TP | EC | EG |
    SV | GQ | ER | EE | ET | FK | FO | FJ | FI | FR | GF | PF | TF | GA | GM | GE | DE | GH |
    GI | GR | GL | GD | GP | GU | GT | GN | GW | GY | HT | HM | VA | HN | HK | HU | IS |
    IN | ID | IR | IQ | IE | IL | IT | JM | JP | JO | KZ | KE | KI | KP | KR | KW | KG | LA | LV |
    LB | LS | LR | LY | LI | LT | LU | MO | MK | MG | MW | MY | MV | ML | MT | MH | MQ
    | MR | MU | YT | MX | FM | MD | MC | MN | MS | MA | MZ | MM | NA | NR | NP | NL |
    AN | NC | NZ | NI | NE | NG | NU | NF | MP | NO | OM | PK | PW | PS | PA | PG | PY |
    PE | PH | PN | PL | PT | PR | QA | RE | RO | RU | RW | SH | KN | LC | PM | VC | WS |
    SM | ST | SA | SN | SC | SL | SG | SK | SI | SB | SO | ZA | GS | ES | LK | SD | SR | SJ | SZ
    | SE | CH | SY | TW | TJ | TZ | TH | TG | TK | TO | TT | TN | TR | TM | TC | TV | UG |
    UA | AE | GB | US | UM | UY | UZ | VU | VE | VN | VG | VI | WF | EH | YE | YU | ZM |
    ZW | AC | GG | IM | JE | UK ) >
    <!ELEMENT phone (#PCDATA) >
    <!ELEMENT fax (#PCDATA) >
    <!ELEMENT e-mail (#PCDATA) >
    <!ELEMENT reg-status (#PCDATA) >
    <!ELEMENT url (#PCDATA) >
]>

```

## Whois Data Specification – ICANN

Sponsor shall ensure Registry Operator provides bulk access by ICANN to up-to-date data concerning domain name and nameserver registrations maintained by Registry Operator in connection with the Sponsored TLD on a daily schedule, only for purposes of verifying and ensuring the operational stability of Registry Services, the DNS, and the Internet.

The procedures for providing access, and the specification of the content and format of this data, will be as stated below, until changed according to the Sponsorship Agreement. This Appendix is subject to change by agreement of Sponsor and ICANN during the design process as well as during the IETF standards process. In addition, Sponsor agrees to require Registry Operator to implement changes to this Appendix specified by ICANN to conform to the IETF provreg working group's protocol specification no later than 135 days after the IETF specification is adopted as a Proposed Standard [[RFC 2026](#), section

4.1.1]. Accordingly, the following represents the target architecture and initial functionality.

## **A. Procedures for Providing Access**

Sponsor shall ensure Registry Operator prepares a full data set for one day of each week (the day to be designated by ICANN). Full data sets shall be up-to-date and coherent as of 1200 UTC on the day to which they relate. Until a different day is designated by ICANN, the full data sets will be prepared for Sundays.

**1. Preparation of Files Containing Data Sets.** Each full data set consists of an XML document meeting the content and format requirements of Parts B and C of this document. Once the XML document is generated, the following preparation steps will be performed:

a. The XML document will be placed in a file named according to the following convention:

"wfYYMMDD" where "YYMMDD" is replaced with the date (YY=last two digits of year; MM=number of month; DD=day; in all cases a single-digit number should be left-padded with a zero).

b. The Registry Operator may optionally split the document using the Unix SPLIT command (or equivalent) to produce files no less than 1GB each (except the final file). If files are split, an .MD5 file (produced with MD5SUM or equivalent) must be included with the resulting files to isolate errors. The Registry Operator may optionally compress the document using the Unix GZIP command (or equivalent) to reduce the filesize.

c. The file(s) will then be encrypted and signed using PGP, version 6.5.1 or above, with a key of DH/DSS type and 2048/1024-byte length. (Note that PGP compresses the escrow file in addition to encrypting it.) An ICANN public key will be used for the encryption and the Registry Operator's private key will be used for the signature. Public keys will be exchanged between the Registry Operator and ICANN by e-mail, physical delivery of floppy diskettes or other agreed means.

**2. Transmission of Full Data Sets.** Once prepared, full data sets will be provided according to paragraph a below or, at Sponsor and Registry Operator's option, according to paragraph b below:

a. Sponsor shall ensure Registry Operator makes full data sets available for download by ICANN by Internet File Transfer Protocol (FTP) (FTP access will be password protected and limited to prespecified IP ranges). The data sets will be made available for download beginning no later than 2000 UTC on the day to which they relate and until the next full data set becomes available for download.

b. Sponsor shall ensure Registry Operator writes the full data set to DAT (DDS-4) tape (or other media specified by ICANN) and sends it to ICANN by expedited delivery service (such as FedEx or DHL). The full data set will be scheduled for arrival at ICANN no later than the second calendar day following the day to which the data set relates.

## **B. Content**

The full data sets will consist of four types of the objects and contents described for full data sets in Appendix 5.

## **C. Format**

Full data sets will be XML version 1.0, UTF-8 encoded documents conforming to the schema/document type declaration set forth in Appendix 5.

# **Appendix 6**

## **Schedule of Reserved Names**

Except to the extent that ICANN otherwise expressly authorizes in writing, the Registry Operator shall reserve names formed with the following labels from initial (i.e. other than renewal) registration within the TLD:

**A. Labels Reserved at All Levels.** The following names shall be reserved at the second level and at all other levels within the TLD at which Registry Operator makes registrations:

ICANN-related names:

- aso
- gnso
- icann
- internic
- ccns0

IANA-related names:

- afrinic
- apnic
- arin
- example
- gtld-servers

- iab
- iana
- iana-servers
- iesg
- ietf
- irtf
- istf
- lacnic
- latnic
- rfc-editor
- ripe
- root-servers

**B. Additional Second-Level Reservations.** In addition, the following names shall be reserved at the second level:

- All single-character labels.
- All two-character labels shall be initially reserved. The reservation of a two-character label string shall be released to the extent that the Registry Operator reaches agreement with the government and country-code manager, or the ISO 3166 maintenance agency, whichever appropriate. The Registry Operator may also propose release of these reservations based on its implementation of measures to avoid confusion with the corresponding country codes.

**C. Two Letter Airline Designator Codes.** As of the Effective Date of this contract, Sponsor allows airlines and other aviation community members to register their specific industry standard two-character airline designator codes currently managed by IATA (International Air Transport Association) as second-level domain identifiers in the Sponsored TLD. Sponsor clearly and publicly states that the industry standard two-character airline designator codes have nothing to do with the ISO 3166-1 two-letter codes relating to the names of countries and distinct economies (“ccTLDs”). [*NOTE: this text was incorporated and adapted from Appendix 23, Part 6 of the existing agreement*].

**D. Tagged Domain Names.** All labels with hyphens in the third and fourth character positions (e.g., "bq--1k2n4h4b" or "xn--ndk061n")

**E. Second-Level Reservations for Registry Operations.** The following names are reserved for use in connection with the operation of the registry for the Registry TLD. Registry Operator may use them, but upon conclusion of Sponsor’s designation as Sponsor of the registry for the Registry TLD they shall be transferred as specified by ICANN:

- nic
- whois
- www

**F. Names Registered to Sponsor.** Sponsor may register up to 1000 domain names directly with the Registry Operator and keep these names under direct management in accordance with the .aero Domain Management Policy until the conclusion of its designation by ICANN as the sponsor for the Sponsored TLD. At that time, all such names that are registered to the Sponsor (but not including those in Part B below) will be transferred at the conclusion of status of sponsor of the registry.

Note: for clarity reasons, all the names listed hereafter are written without the “.aero” suffix.

**Part A: Names to Be Transferred at Conclusion of Sponsor Status:**

Within 90 days of it being determined that Sponsor will conclude its designation by ICANN as the Sponsor for the Sponsored TLD, Sponsor will submit a list of all names that it has under direct management as described above.

**Part B: Names Retained by SITA at Conclusion of its Status as Sponsor:**

1. aircom
2. airlineinbox
3. airportinbox
4. airportvision
5. airtariff
6. axcess
7. cute
8. cute2
9. cuteos
10. edifast
11. effs
12. e-file
13. fanfare
14. fleetwatch
15. freightnet
16. graflite
17. intermail400
18. loadstar
19. netdraw
20. pcpartner
21. profile
22. sahara
23. satellite-aircom

24. sita
25. sitacars
26. sitacuteos
27. sitadial
28. sitafax
29. sitainc
30. sita-inc
31. sitalink
32. sitamail
33. sitaplus
34. sitasc
35. sita-sc
36. sitatex
37. sitatours
38. sitaview
39. sitavision
40. skycom
41. skyform
42. skyway
43. strategy
44. typea
45. typeb
46. vipnetwork
47. winfare
48. worldtracer



## APPENDIX 7

### FUNCTIONAL AND PERFORMANCE SPECIFICATIONS

#### Part A - Minimum ICANN-Required Functional Specifications for Registry Services

Pursuant to the responsibility delegated to it in Appendix S, Part 2, Sponsor will prescribe functional requirements for Registry Services provided by the Registry Operator for the Sponsored TLD. Those functional requirements shall ensure that at least the following minimum functional capabilities are provided.

##### 1. Conventions

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 IETF RFC [2119](#).

##### 2. Nameserver Requirements

The nameservers for the Sponsored TLD MUST be operated in compliance with the following Requests for Comments (RFCs): [1034](#), [1035](#), [1101](#), [2181](#), [2182](#). In clarification of the statement of host-name rules in these RFCs, all Registered Names SHALL comply with the following syntax in augmented Backus-Naur Form (BNF) as described in RFC [2234](#):

```
dot = %x2E ; "."
dash = %x2D ; "-"
alpha = %x41-5A / %x61-7A ; A-Z / a-z
digit = %x30-39 ; 0-9
ldh = alpha / digit / dash
id-prefix = alpha / digit
label = id-prefix [*61ldh id-prefix]
sldn = label dot label; not to exceed 254 characters
hostname = *(label dot) sldn; not to exceed 254 characters
```

There MUST be nameservers for the Sponsored TLD on at least five different network segments. So that the IANA has zone-file access, zone-file transfers MUST be enabled at all nameservers for transfers to at least 208.77.188/22 and 192.0.32.0/20.

##### 3. Registry System Requirements

The registry system MUST enforce the name reservations set forth in Appendix 6 and the Charter requirements set forth in Appendix S, Part 1.

#### **4. Whois Service Requirements**

Whois service **MUST** meet at least the functional specifications set forth in Appendix 5 and Appendix S, Part 5.

#### **5. Data Escrow Requirements**

Data escrow **MUST** meet at least the functional specifications set forth in Appendices 1 and 2. The registry shall be capable of storing the data to be escrowed.

#### **6. Reporting Requirements**

The registry system **MUST** provide data sufficient to meet the reporting requirements set forth in Appendix 4.

### **Part B - Minimum ICANN-Required Performance Specifications for Registry Services**

Pursuant to the responsibility delegated to it in Appendix S, Part 2, Sponsor will prescribe performance requirements for Registry Services provided by the Registry Operator for the Sponsored TLD. Those performance requirements shall ensure that at least the following minimum performance levels are provided.

#### **1. Conventions**

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 IETF [RFC 2119](#).

#### **2. Definitions**

Capitalized terms used in this Appendix and not otherwise defined shall have the meaning ascribed to them in the Sponsorship Agreement.

2.1. "Core Internet Service Failure" refers to an extraordinary and identifiable event beyond the control of Registry Operator affecting the Internet services to be measured pursuant to [item 3.1.3](#) of this Appendix. Such events include but are not limited to congestion collapse, partitioning, power grid failures, and routing failures.

2.2. "DNS Service" shall mean the service complying with [RFC 1034](#) made available on TCP/UDP port 53 on the Nameservers.

2.3. "Monthly Timeframe" shall mean each single calendar month beginning and ending at 0000 Coordinated Universal Time (UTC).

2.4. "Nameservers" refers to the nameservers to which the Sponsored TLD is delegated in the Authoritative Root-Server System.

2.5. "Performance Specification" refers to a description of the performance attributes of a particular system or service.

2.6. "Round-trip" shall mean the amount of measured time that it takes for a reference query to make a complete trip from the sampling agent, to the service being tested and back again. Usually measured in milliseconds.

2.7. "Whois Service" shall mean the information service made available on TCP port 43 on selected servers and described more fully in Appendix 5.

### **3. Service Levels (Availability and Performance)**

#### **3.1. DNS Service**

3.1.1. **DNS Service Availability.** Service availability as it applies to the DNS Service refers to the ability of the Nameservers, as a group, to resolve a DNS query from an Internet user. The committed Performance Specification is 99.999% measured in Monthly Timeframes.

3.1.2. **Performance Level.** At any time at which it is available, each Nameserver (including a cluster of Nameservers addressed at a shared IP address) **MUST** be able to handle a load of queries for DNS data that is three times the measured daily peak (averaged over the Monthly Timeframe) of such requests on the most loaded Nameserver. [NOTE: This requirement is based on [RFC 2870](#), Section 2.3.]

3.1.3. **Cross-Network Nameserver Performance Requirements.** The committed Performance Specification for cross-network Nameserver performance is a measured Round-trip time of under 300 ms and measured packet loss of under 10%. Cross-network Nameserver performance measurements will be conducted by ICANN at times of its choosing, in the following manner:

3.1.3.1. The measurements will be conducted by sending strings of DNS request packets from each of four measuring locations to each of the Nameservers and observing the responses from the Nameservers. (These strings of requests and responses are referred to as a "CNNP Test".) The measuring locations will be four root nameserver locations (on the US East Coast, US West Coast, Asia, and Europe).

3.1.3.2. Each string of request packets will consist of 100 UDP packets at 10-second intervals requesting ns records for arbitrarily selected second-level domains in the Sponsored TLD, preselected to ensure that the names exist in the Sponsored TLD and are resolvable. The packet loss (i.e. the percentage of response packets not received) and the average Round-trip time for response packets received will be noted.

3.1.3.3. To meet the packet loss and Round-trip-time requirements for a particular CNNP Test, all three of the following must be true:

3.1.3.3.1. The Round-trip time and packet loss from each measurement location to at least one Nameserver must not exceed the required values.

- 3.1.3.3.2. The Round-trip time to each of 75% of the Nameservers from at least one of the measurement locations must not exceed the required value.
- 3.1.3.3.3. The packet loss to each of the Nameservers from at least one of the measurement locations must not exceed the required value.
- 3.1.3.3.4. Any failing CNNP Test result obtained during an identified Core Internet Service Failure shall not be considered.
- 3.1.3.3.5. To ensure a properly diverse testing sample, ICANN will conduct the CNNP Tests at varying times (i.e. at different times of day, as well as on different days of the week). The cross-network Nameserver performance requirement will be deemed to have not been met only if the Nameservers persistently fail (see [item 3.1.3.3](#) above) the CNNP Tests with no less than three consecutive failed CNNP Tests to be considered to have persistently failed.
- 3.1.3.3.6. In the event of persistent failure of the CNNP Tests, ICANN will give Sponsor written notice of the failures (with backup data) and Sponsor will have sixty days to cure the failure.
- 3.1.3.3.7. If, following Sponsor's opportunity to cure in [item 3.1.3.6](#) above, the Nameservers continue to persistently fail CNNP Tests and Sponsor fails to resolve the problem within thirty days after written notice of the continuing failures, Sponsor will be in breach of its obligations under the TLD Sponsorship Agreement.
- 3.1.3.3.8. Sixty days before the commencement of testing under this provision, ICANN will provide Sponsor with the opportunity to evaluate the testing tools and procedures to be used by ICANN. In the event that Sponsor does not approve of such tools and procedures, ICANN will work directly with Sponsor to make necessary modifications.

## **3.2. Whois Service**

**3.2.1. Whois Service Availability.** The committed Performance Specification for Whois Service is 99.4% measured in Monthly Timeframes.

**3.2.2. Performance Level.** The Whois Service will, on average, be able to handle 50 queries per second.

**3.2.3. Response Times.** The Whois Service will have a worst-case response time of 1.5 seconds, not including network delays, before it will be considered unavailable.

**3.2.4. Updates.** The data provided by the Whois Service will be updated on at least a daily basis.

## **4. Measurement**

4.1. Except in the case of Cross-Network Nameserver Performance Requirements ([item 3.1.3](#) above), Registry Operator will perform continuous monitoring from internally located systems as

a means to verify that the availability and performance measurements in this Appendix are being met.

4.2. Sponsor will report the results of monitoring under [item 4.1](#) above in its monthly reports described in Appendix 4.

## APPENDIX S

### Contents

Part 1.	Sponsored TLD Charter
Part 2.	Delegated Authority
Part 3.	Description of Sponsored TLD Community
Part 4.	Selection of Registrars
Part 5.	Public Whois
Part 6.	Additional Provisions

### Part 1 – Sponsored TLD Charter

#### **.aero Charter**

The .aero TLD is intended to serve the global aviation community. In accordance with its Articles of Association, the Sponsor will manage the .aero TLD pursuant to the provisions of this charter ("Charter") and in the interests of the global aviation community. Sponsor will be responsible for establishing registration requirements for the .aero TLD consistent with this Charter.

The .aero TLD is restricted to people, entities and government agencies which: (1) provide for and support the efficient, safe, and secure transport of people and cargo by air; and (2) facilitate or perform the necessary transactions to transport people and cargo by air.

The Sponsor, with the advice of relevant government and industry representative bodies, may establish stricter requirements for registrants according to the delegation of authority described in Part 2 of this Appendix.

Without being exhaustive, Sponsor's policies may permit registrations within the global aviation community by the following:

- aerospace industry
- airlines
- airport authorities and airport / aerodrome operators
- air freight industry
- air logistics companies

- air traffic service providers
- air crews
- air crew and air transport unions
- aviation clubs (aero clubs) and their members
- aviation consultants
- aviation education and information providers
- aviation industry associations and other representative bodies
- aviation insurance associations
- aviation law associations
- aviation media
- aviation suppliers and service providers
- charter and private aircraft operators
- civil aviation authorities
- computer reservations systems
- general aviation
- global distribution systems
- government agencies responsible for providing aviation, facilitation and meteorological services
- ground handling operators
- licensed aircraft maintenance and engineering professionals
- pilots

The Sponsor may extend the bulleted list above if petitioned to do so by a recognised organization within the global aviation community, provided that any such extension is (1) in accordance with the global aviation community's perceptions about the prevailing scope of the community, and (2) is restricted to people, entities, and government agencies which (a) provide for and support efficient, safe, and secure transport of people and cargo by air, and (b) facilitate or perform the necessary transactions to transport people and cargo by air.

## **Part 2 – Delegated Authority**

The following areas of responsibility for development of policies for the Sponsored TLD are delegated to the Sponsor, provided the other provisions of the Agreement and its Appendices are followed:

1. Establishment of naming conventions to be used in the Sponsored TLD.
2. Restrictions on what types of people or entities may register Registered Names (which need not be uniform for all names within the Sponsored TLD), provided the scope of the Charter (Part 1) is not exceeded.
3. Restrictions on how Registered Names may be used (which need not be uniform for all names within the Sponsored TLD), provided the scope of the Charter (Part 1) is not exceeded.

4. Performance of Eligibility and Name-Selection Services (ENS Services), either directly by the Sponsor or by one or more organizations or individuals to which it delegates the responsibility for performing ENS Services, provided that (1) revenues received in connection with ENS Services are used solely to defray the cost of providing ENS Services or otherwise sponsoring the Sponsored TLD, with allowance for accumulation of reasonable operating reserves, or (2) ENS Services are outsourced on a competitive basis.
5. Mechanisms for enforcement of the policies in items 1, 2 and 3, including procedures for cancellation of registrations. See also Subsection 3.1(d)(i)(B).
6. Mechanisms for resolution of disputes between owners of rights in names (such as trademarks) and registrants that do not supplant ICANN's dispute-resolution policies or remedies that may be available under law.
7. Selection of the Registry Operator.
8. Functional and performance specifications for, and pricing of, Registry Services providing the minimum requirements specified in Attachment 7 are met.
9. Matters concerning the operation of the registry for the Sponsored TLD.
10. Selection of ICANN-Accredited Registrars to act as registrars for the Sponsored TLD [see Subsection 7.1(a)], consistent with Appendix S, Part 4.
11. Terms of agreement to be offered by the Registry Operator to ICANN-Accredited Registrars selected by Sponsor, including provisions for fair treatment by the Registry Operator of those registrars. To ensure that all revenues received by the Registry Operator are used solely for the benefit of the community, the Sponsor has the obligation to review and authorize, in a manner consistent with Section 3.1(g), the prices charged by the Registry Operator.
12. Practices and performance of ICANN-Accredited Registrars selected by Sponsor with respect to Registered Names and their registration.
13. Terms of agreement between Sponsor and registrants and registrars and registrants under which Registered Names are registered.
14. Uses and practices by registrants with respect to Registered Names.
15. Provisions for publication of registry and registrar data consistent with the Sponsorship Agreement and Registrar Accreditation Agreements.
16. Terms of agreement between or among Sponsor, Registry Operator, registrars, other relevant entities and registrants necessary to give effect to the above.



### **Part 3 – Description of Sponsored TLD Community**

The .aero TLD is intended to serve the needs of the global aviation community (the "Community"), which includes those people, entities and government agencies which: (1) provide for and support the efficient, safe, and secure transport of people and cargo by air; and (2) facilitate or perform the necessary transactions to transport people and cargo by air.

The Sponsor may extend the description of the Community consistent with the Agreement and the .aero Charter.

### **Part 4 – Selection of Registrars**

This Appendix specifies the criteria for Sponsor's selection of ICANN-Accredited Registrars wishing to enter into an Authorizing Agreement to register domain names in the Sponsored TLD.

Sponsor will select from among ICANN-Accredited Registrars in a manner that promotes the following characteristics in the group of authorized ICANN-Accredited Registrars:

1. Recognition of the specific aspects of the aviation community, that will be supported by the .aero TLD and a willingness to participate in it in that spirit;
2. Thorough understanding of the principles and intentions underlying .aero TLD policies, especially as manifested in the domain name management policy and ability to provide Eligibility and Name-Selection Services (ENS Services);
3. Dedicated willingness and ability to propagate and enforce these policies in an observant and diligent manner and in accordance with policies and procedures prescribed by the Sponsor;
4. Familiarity with the needs of the aviation community and established modes for reflecting these needs in the ENS Services processes;
5. Broad geographic distribution and language diversity of registrars;
6. Established collaborative contact with one or several associations representing the aviation community in the language and geographical region or sector served by the registrar; and
7. Dedicated willingness and ability to act together with the aviation community associations referred to above, in the processing of registration requests.

Sponsor will periodically review and as appropriate revise its selection of registrars.

### **Part 5 – Public Whois [moved to Appendix 5]**

