

SPECIFICATION 6

REGISTRY INTEROPERABILITY AND CONTINUITY SPECIFICATIONS

1. Standards Compliance

- 1.1. **DNS.** Registry Operator shall comply with relevant existing RFCs and those published in the future by the Internet Engineering Task Force (IETF), including all successor standards, modifications or additions thereto relating to the DNS and name server operations including without limitation RFCs 1034, 1035, 1123, 1982, 2181, 2182, 3226, 3596, 3597, 4343, 5966 and 6891. DNS labels may only include hyphens in the third and fourth position if they represent valid IDNs (as specified above) in their ASCII encoding (e.g., "xn--ndk061n").
- 1.2. **EPP.** Registry Operator shall comply with relevant existing RFCs and those published in the future by the Internet Engineering Task Force (IETF) including all successor standards, modifications or additions thereto relating to the provisioning and management of domain names using the Extensible Provisioning Protocol (EPP) in conformance with RFCs 5910, 5730, 5731, 5732 (if using host objects), 5733 and 5734. If Registry Operator implements Registry Grace Period (RGP), it will comply with RFC 3915 and its successors. If Registry Operator requires the use of functionality outside the base EPP RFCs, Registry Operator must document EPP extensions in Internet-Draft format following the guidelines described in RFC 3735. Registry Operator will provide and update the relevant documentation of all the EPP Objects and Extensions supported to ICANN prior to deployment.
- 1.3. **DNSSEC.** Registry Operator shall sign its TLD zone files implementing Domain Name System Security Extensions ("DNSSEC"). For the absence of doubt, Registry Operator shall sign the zone file of <TLD> and zone files used for in-bailiwick glue for the TLD's DNS servers. During the Term, Registry Operator shall comply with RFCs 4033, 4034, 4035, 4509 and their successors, and follow the best practices described in RFC 6781 and its successors. If Registry Operator implements Hashed Authenticated Denial of Existence for DNS Security Extensions, it shall comply with RFC 5155 and its successors. Registry Operator shall accept public-key material from child domain names in a secure manner according to industry best practices. Registry shall also publish in its website the DNSSEC Practice Statements (DPS) describing critical security controls and procedures for key material storage, access and usage for its own keys and secure acceptance of registrants' public-key material. Registry Operator shall publish its DPS following the format described in RFC 6841. DNSSEC validation must be active and use the IANA DNS Root Key Signing Key set (available at <https://www.iana.org/dnssec/files>) as a trust anchor for Registry Operator's Registry Services making use of data obtained via DNS responses.

- 1.4. **IDN.** If the Registry Operator offers Internationalized Domain Names ("IDNs"), it shall comply with RFCs 5890, 5891, 5892, 5893 and their successors. Registry Operator shall comply with the ICANN IDN Guidelines at <<http://www.icann.org/en/topics/idn/implementation-guidelines.htm>>, as they may be amended, modified, or superseded from time to time. Registry Operator shall publish and keep updated its IDN Tables and IDN Registration Rules in the IANA Repository of IDN Practices.
- 1.5. **IPv6.** Registry Operator shall be able to accept IPv6 addresses as glue records in its Registry System and publish them in the DNS. Registry Operator shall offer public IPv6 transport for, at least, two of the Registry's name servers listed in the root zone with the corresponding IPv6 addresses registered with IANA. Registry Operator should follow "DNS IPv6 Transport Operational Guidelines" as described in BCP 91 and the recommendations and considerations described in RFC 4472. Registry Operator shall offer public IPv6 transport for its Registration Data Publication Services as defined in Specification 4 of this Agreement; e.g., Whois (RFC 3912), Web based Whois. Registry Operator shall offer public IPv6 transport for its Shared Registration System (SRS) to any Registrar, no later than six (6) months after receiving the first request in writing from a gTLD accredited Registrar willing to operate with the SRS over IPv6.
- 1.6. **IANA Rootzone Database.** In order to ensure that authoritative information about the TLD remains publicly available, Registry Operator shall submit a change request to the IANA functions operator updating any outdated or inaccurate DNS or WHOIS records of the TLD. Registry Operator shall use commercially reasonable efforts to submit any such change request no later than seven (7) calendar days after the date any such DNS or WHOIS records becomes outdated or inaccurate. Registry Operator must submit all change requests in accordance with the procedures set forth at <<http://www.iana.org/domains/root>>.
- 1.7. **Network Ingress Filtering.** Registry Operator shall implement network ingress filtering checks for its Registry Services as described in BCP 38 and BCP 84, which ICANN will also implement.

2. **Registry Services**

- 2.1. **Registry Services.** "Registry Services" are, for purposes of the Agreement, defined as the following: (a) those services that are operations of the registry critical to the following tasks: the receipt of data from registrars concerning registrations of domain names and name servers; provision to registrars of status information relating to the zone servers for the TLD; dissemination of TLD zone files; operation of the registry DNS servers; and dissemination of contact and other information concerning domain name server registrations in the TLD as required by this Agreement; (b) other

products or services that the Registry Operator is required to provide because of the establishment of a Consensus Policy as defined in Specification 1; (c) any other products or services that only a registry operator is capable of providing, by reason of its designation as the registry operator; and (d) material changes to any Registry Service within the scope of (a), (b) or (c) above.

- 2.2. **Wildcard Prohibition.** For domain names which are either not registered, or the registrant has not supplied valid records such as NS records for listing in the DNS zone file, or their status does not allow them to be published in the DNS, the use of DNS wildcard Resource Records as described in RFCs 1034 and 4592 or any other method or technology for synthesizing DNS Resources Records or using redirection within the DNS by the Registry is prohibited. When queried for such domain names the authoritative name servers must return a "Name Error" response (also known as NXDOMAIN), RCODE 3 as described in RFC 1035 and related RFCs. This provision applies for all DNS zone files at all levels in the DNS tree for which the Registry Operator (or an affiliate engaged in providing Registration Services) maintains data, arranges for such maintenance, or derives revenue from such maintenance.

3. Registry Continuity

- 3.1. **High Availability.** Registry Operator will conduct its operations using network and geographically diverse, redundant servers (including network-level redundancy, end-node level redundancy and the implementation of a load balancing scheme where applicable) to ensure continued operation in the case of technical failure (widespread or local), or an extraordinary occurrence or circumstance beyond the control of the Registry Operator. Registry Operator's emergency operations department shall be available at all times to respond to extraordinary occurrences.
- 3.2. **Extraordinary Event.** Registry Operator will use commercially reasonable efforts to restore the critical functions of the registry within twenty-four (24) hours after the termination of an extraordinary event beyond the control of the Registry Operator and restore full system functionality within a maximum of forty-eight (48) hours following such event, depending on the type of critical function involved. Outages due to such an event will not be considered a lack of service availability.
- 3.3. **Business Continuity.** Registry Operator shall maintain a business continuity plan, which will provide for the maintenance of Registry Services in the event of an extraordinary event beyond the control of the Registry Operator or business failure of Registry Operator, and may include the designation of a Registry Services continuity provider. If such plan includes the designation of a Registry Services continuity provider, Registry Operator shall provide

the name and contact information for such Registry Services continuity provider to ICANN. In the case of an extraordinary event beyond the control of the Registry Operator where the Registry Operator cannot be contacted, Registry Operator consents that ICANN may contact the designated Registry Services continuity provider, if one exists. Registry Operator shall conduct Registry Services Continuity testing at least once per year.

4. **Abuse Mitigation**

- 4.1. **Abuse Contact.** Registry Operator shall provide to ICANN and publish on its website its accurate contact details including a valid email and mailing address as well as a primary contact for handling inquiries related to malicious conduct in the TLD, and will provide ICANN with prompt notice of any changes to such contact details.
- 4.2. **Malicious Use of Orphan Glue Records.** Registry Operator shall take action to remove orphan glue records (as defined at <http://www.icann.org/en/committees/security/sac048.pdf>) when provided with evidence in written form that such records are present in connection with malicious conduct.

5. **Supported Initial and Renewal Registration Periods**

- 5.1. **Initial Registration Periods.** Initial registrations of registered names may be made in the registry in one (1) year increments for up to a maximum of ten (10) years. For the avoidance of doubt, initial registrations of registered names may not exceed ten (10) years.
- 5.2. **Renewal Periods.** Renewal of registered names may be made in one (1) year increments for up to a maximum of ten (10) years. For the avoidance of doubt, renewal of registered names may not extend their registration period beyond ten (10) years from the time of the renewal.

6. **Name Collision Occurrence Management**

- 6.1. **No-Activation Period.** Registry Operator shall not activate any names in the DNS zone for the Registry TLD (except for "NIC") until at least 120 calendar days after the effective date of this agreement. Registry Operator may allocate names (subject to subsection 6.2 below) during this period only if Registry Operator causes registrants to be clearly informed of the inability to activate names until the No-Activation Period ends.

6.2. **Name Collision Occurrence Assessment**

- 6.2.1 Registry Operator shall not activate any names in the DNS zone for the Registry TLD except in compliance with a Name Collision Occurrence Assessment provided by ICANN regarding the Registry TLD. Registry

Operator will either (A) implement the mitigation measures described in its Name Collision Occurrence Assessment before activating any second-level domain name, or (B) block those second-level domain names for which the mitigation measures as described in the Name Collision Occurrence Assessment have not been implemented and proceed with activating names that are not listed in the Assessment.

- 6.2.2 Notwithstanding subsection 6.2.1, Registry Operator may proceed with activation of names in the DNS zone without implementation of the measures set forth in Section 6.2.1 only if (A) ICANN determines that the Registry TLD is eligible for this alternative path to activation of names; and (B) Registry Operator blocks all second-level domain names identified by ICANN and set forth at <http://newgtlds.icann.org/en/announcements-and-media/announcement-2-17nov13-en> as such list may be modified by ICANN from time to time. Registry Operator may activate names pursuant to this subsection and later activate names pursuant to subsection 6.2.1.
- 6.2.3 The sets of names subject to mitigation or blocking pursuant to Sections 6.2.1 and 6.2.2 will be based on ICANN analysis of DNS information including "Day in the Life of the Internet" data maintained by the DNS Operations, Analysis, and Research Center (DNS-OARC) <https://www.dns-oarc.net/oarc/data/dit/>.
- 6.2.4 Registry Operator may participate in the development by the ICANN community of a process for determining whether and how these blocked names may be released.
- 6.2.5 If ICANN determines that the TLD is ineligible for the alternative path to activation of names, ICANN may elect not to delegate the TLD pending completion of the final Name Collision Occurrence Assessment for the TLD, and Registry Operator's completion of all required mitigation measures. Registry Operator understands that the mitigation measures required by ICANN as a condition to activation of names in the DNS zone for the TLD may include, without limitation, mitigation measures such as those described in Section 3.2 of the New gTLD Name Collision Occurrence Management Plan approved by the ICANN Board New gTLD Program Committee (NGPC) on 7 October 2013 as found at <http://www.icann.org/en/groups/board/documents/resolutions-new-gtld-annex-1-07oct13-en.pdf>.

6.3. **Name Collision Report Handling**

- 6.3.1 During the first two years after delegation of the TLD, Registry Operator's emergency operations department shall be available to

receive reports, relayed by ICANN, alleging demonstrably severe harm from collisions with overlapping use of the names outside of the authoritative DNS.

- 6.3.2 Registry Operator shall develop an internal process for handling in an expedited manner reports received pursuant to subsection 6.3.1 under which Registry Operator may, to the extent necessary and appropriate, remove a recently activated name from the TLD zone for a period of up to two years in order to allow the affected party to make changes to its systems.