

## Response to the Gartner Technical Report

The Dot Org Foundation wishes to thank ICANN and the Gartner technical evaluation team for their assessments of the eleven proposals to operate the .org registry. We appreciate the high marks that we received from Gartner and would like to take this opportunity to briefly highlight the primary technological merits of our bid that address the few issues noted by the Gartner report.

First, with respect to each of the four technical criteria evaluated by Gartner, we have highlighted 2-3 major points that we believe distinguish the technical aspects of our proposal:

**Criterion 1:** *Need to provide a stable, well-functioning registry.* Our registry services provider, Registry Advantage, an independent division of Register.com, has provided us with documented assurances that we can meet this objective.

- *DNS.* Register.com has experience managing 3.4 million domain names as a registrar, demonstrating significant scalability and experience. Register.com runs authoritative DNS, a Whois service and a thick customer database for more names than those present in the current .org domain. Register.com also has extensive experience with registrar-registry connections. While Registry Advantage's databases are not as large as Register.com's databases, their design – based on Register.com experience - are as scalable as those used by the registrar business. The core systems architecture for the registry mirrors the registrar, so that they are equally stable and scalable.
- *Funding.* The company is well funded (approximately \$200 million in cash and cash equivalents reported in its latest public filing), so that it provides the financial stability to ensure a successful transition as well as the long-term stable operation of the registry, regardless of the receipt of the endowment or any lower registration volumes.
- *Tested.* Registry Advantage tested its systems extensively using the full .org dataset to ensure that we can meet the needs of the .org registry for availability, throughput and scalability.

**Criterion 7:** *The type, quality, and cost of the registry services proposed.*

- *All services.* Registry Advantage provides a full suite of registry services, including 24x7 customer service, registrar toolkit, testing environment, billing and collection, reporting and compliance capabilities.
- *Best SLAs.* Registry Advantage has offered best of breed Service Level Agreements (SLAs), exceeding both the current SLAs in place for existing generic Top Level Domains (gTLDs) and the proposed SLAs for all the other .org applicants.

**Criterion 8:** *Ability and commitment to support, function in, and adapt to protocol changes in the shared registry system.*

- *EPP & RRP.* Registry Advantage has a current deployment of EPP-06/04, and is committed to maintaining a state-of-the-art registry system with support for the latest industry accepted protocols. Indeed, Registry Advantage deployed the first known public EPP-06/04 server in May of this year. It is currently working on implementing RRP.
- *Registrar Treatment.* We and Registry Advantage have a Code of Conduct, Equivalent Access Plan and OCI Plan based on the relevant ICANN documents. All .org registrars will be supported with training, testing, and 24x7 ongoing customer service, all of which would be provided in various formats and languages to maximize equivalent service.

**Criterion 9:** *Transition considerations.*

- *Plan.* Our application contains a highly detailed transition plan based on Registry Advantage's experience in transitioning multiple country code Top Level Domains (ccTLDs).
- *Whois.* There is similarly a carefully considered plan to migrate from a thin to a thick registry.

We hope this summary helps frame ICANN's analysis of the merits of our proposal. Below is further detail in response to specific issues raised in the Gartner report.

## **Registry Advantage Response to Gartner Report**

The Gartner report concluded that the Dot Org Foundation bid was ranked in the top five. In analyzing the technical merits of the bid, Gartner raised several issues, to which the Foundation has asked its registry services provider, Registry Advantage, to respond in an effort to clarify and amplify upon the Dot Org Foundation application.

### **1. Size and scope of existing registries**

*As Gartner noted, Registry Advantage is a registry outsource provider to the .pro gTLD and seven ccTLD registries. While the details of our ccTLDs were not described in our original proposal to ICANN for reasons of client confidentiality, we have since obtained permission to name them, and they are listed below:*

- .ag (Antigua)
- .ec (Ecuador)
- .hn (Honduras)
- .la (Laos)
- .mn (Mongolia)
- .sc (Seychelles)
- .uz (Uzbekistan)

As mentioned in the proposal, 19 registrars currently register domains in our SRS systems.

Registry Advantage provides services for over 15,000 names in total across these registries. This is an admittedly small number of names, compared to the registrar side of Register.com (3.4 million domain names). However, our 8 registry clients have provided us with a breadth and depth of experience in terms of transitioning and managing registries with various policy and business requirements. For example, various registries require different Whois information fields. They have different pricing models for different sets of domain names – ones at second level versus those registered in their sub-domains, for example. The registries and registrars have different levels of personnel expertise, language proficiency, and systems capabilities, all of which requires us to be flexible, innovative and to plan well for a variety of circumstances. Altogether, our varied experience supporting clients with different requirements has provided us with the ability to ensure a smooth transition and the continued stable operation of the .org registry. In short, Registry Advantage has the necessary systems in place.

One of the differentiating highlights of the Dot Org Foundation proposal was the Test Results that showed our ability to perform 2-3 times better than the peak capacity requirements across all measures of performance. We would not have entered into the highest service level commitments of all the proposals without confidence in our ability to perform at those levels.

Moreover, Registry Advantage's smaller size, we believe, is an advantage from a registry competition perspective. Compared to the other top ranked applicants, Registry Advantage does not currently run a large unrestricted gTLD. The reassignment of the .org TLD provides ICANN with the opportunity to increase competition among registries.

We believe that awarding the .org registry to the Dot Org Foundation – an organization founded for the sole purpose of managing .org – backed by a relatively smaller registry operator - would diversify the registry services base in the domain name industry without jeopardizing stability. The successes of Afiliias and NeuStar in building larger scale registry businesses over the past year demonstrate that new entrants can succeed in building high quality registry systems for the benefit of the Internet community; Registry Advantage brings the added benefit of leveraging a fully deployed, functional registry system prior to being awarded the contract.

## **2. Firewall security**

*The Gartner report made the following technical observation in its letter to ICANN:  
“Proposal indicates only one firewall tier, comparable proposals include a second firewall tier protecting the core SRS databases.”*

We believe that we have designed a network security model superior to a straightforward 2-tier physical firewall model via a combination of virtual LAN, switch-level access control lists, host-based logical firewalls, and one tier of physical firewall appliances.

First, all servers are segregated into specific virtual LANs (VLANs). Hosts with multiple network interfaces are generally assigned to one VLAN per interface; hosts with only one interface will only be assigned to a single VLAN. 802.11q tagging is used to carry VLAN information between switches and enforce global VLAN consistency. All communications between VLANs must occur at layer 3 and are routed through the core network switch.

Second, the core switch enforces an access control list (ACL) that prevents access between unauthorized hosts. Access control policies can be established either for an entire VLAN, or for an individual host within a VLAN. As is the case throughout the Registry Advantage security model, access is only permitted in cases where there is a clear functional requirement—the default policy is to deny all traffic between VLANs and exceptions must be created where access is specifically required. The ACL limits not only whether communication is allowed with a specific host, but also allows fine-grained control over communication to specific UDP or TCP ports. In this respect, the switch performs the same function as a dedicated firewall appliance in some other architectures. By using the switch instead of a firewall, two principal advantages are achieved. First, because the core switch is capable of processing ACLs at line rates, there is no potential performance penalty as a result of introducing the firewall into the network environment. Second, security is actually increased because access controls are provided between all areas of the network as opposed to large layers segregated by the firewall.

In addition to the ACLs enforced by the switch, Registry Advantage employs another layer of network level security on the hosts themselves. Each host is configured with IP filtering software, such as “ipfilter”, which allows administrators to strictly limit which hosts may communicate with various services. This software provides a high degree of security, and is used as the basis for some dedicated firewall appliances.

Finally, individual applications enforce Internet Protocol-based restrictions as part of their individual access policies. This applies to both user-accessible applications as well as administrative and management tools.

## **3. Redundancy at the Secondary Site**

*Gartner made the following technical observation in its letter to ICANN:  
“The secondary site is not fully redundant, comparable proposals include equivalent redundancy between the primary and backup site.”*

From an operational perspective, Registry Advantage’s proposal provides the same level of redundancy as the other leading applicants, if not more so. It appears to our technical

team that Gartner did not fully consider the issue of redundancy in its totality when comparing the leading bids; indeed, Gartner's concern about a lack of redundancy at the secondary site may be based on a failure to appreciate the extent of the redundancy at the primary site. Although we would rather not comment directly on the bids of the other applicants, we feel that comparing our applications is the only clear and effective response to this issue. We respectfully suggest that ICANN consider these points in its evaluation of the overall question of redundancy.

*a) Redundancy in Functionality*

ISOC's application makes clear that ISOC/Afilias does not replicate all functionality between sites. That is, there are production features that are hosted at one site and not the other. Specifically, the secondary site deploys "enhanced functionality" servers and OT&E only. There is no mention of what will happen to these services if the D/R site fails, and some basic services may become unavailable even in the event of a failure at the primary site.

NeuStar appears to replicate all functionality between sites, but the lack of detail makes it difficult to determine the level of redundancy at either site. In particular, the DNS zone file distribution components are not listed in either top-level diagram as being anything but single, non-redundant components at both sites. The description of the overall level of redundancy is vague, and only commits to replicate the 5-layer architecture without making any specific component replication assertions.

GNR states in section C-15 of their application that they replicate all functionality between sites, although they do not list the functionality replicated. The proposal refers to an incident in May when GNR operated out of their D/R facility in Norway for three days, following the loss of the UK data center. The proposal states that no services experienced downtime during this incident. However, as mentioned on the GNR website<sup>1</sup>, the .name registry did not begin taking live, real-time registrations until June 26, so their ability to provide real-time fail over is so far unproven.

Registry Advantage replicates all production site functionality at the secondary site.

*b) Redundancy in Database Servers*

ISOC does not have a duplicate database at their secondary site -- only a single database using legacy Sun storage products that Sun Microsystems no longer advertises as an enterprise class managed storage solution. Furthermore, their primary site has a single A5200 attached to each of the database servers, not two arrays each attached to both database servers.

NeuStar indicates redundant data server pairs, but does not specify any details. The clustered data servers are said to have 288GB of internal disk storage in each cluster member, which is clearly not available to the other cluster member. They also claim that each of the clusters at the primary site has access to 10TB of external data, but do not elaborate on how or why this is the case, and do not specify that this 10TB data store is also replicated at the D/R site. Once again, the only claim is that the 5-layer architecture is replicated at both sites, without mention of what level of component redundancy they plan to have.

Registry Advantage's storage is all managed SAN based storage. The primary disk array is the leading SAN storage array in the industry, and comes with a zero downtime guarantee from EMC. We also have another leading SAN product as a secondary

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<sup>1</sup> See <http://www.gnr.com/corporate/page/71/114.html>

storage array at the primary site. Each storage array is attached to both database servers, so any failure scenario is handled at the primary site short of both database servers or both SAN arrays failing simultaneously, at which point the secondary location would become active. At our secondary site, we chose to deploy the same guaranteed zero downtime pre-eminent SAN array from EMC and attach through a full SAN fabric to a single Sun 6500 so that we could subsequently move to full redundancy by adding a secondary storage array and an additional Sun 6500 without interruption of the deployed infrastructure. Such a deployment could be completed rapidly in the event of an extended outage at the primary site.

GNR indicates that they run an active/active cluster configuration for their three databases, but do not elaborate. Their primary site diagram has only a single storage device for all three databases. It also only lists single components for all of the services below the DMZ. Although GNR give no details about their Norwegian D/R facility, they do indicate that it provides a lower capacity than the primary facility.

#### *c) Redundancy in Application Servers*

Although ISOC claims that their D/R site is configured with N+1 redundancy, in the very next line of text, they contradict this by only deploying a single web server, single Whois server, and single SRS server. They also deploy "enhanced functionality" servers and OT&E only at the secondary D/R site.

NeuStar does not provide sufficient detail in their response to identify which applications are replicated and to what degree.

GNR only lists single components at their primary site for any services below their DMZ. Again, they provide no details about their D/R facility in Norway.

Registry Advantage replicates everything else with component redundancy at both sites. Our clustered approach to application servers provides for a significant degree of redundancy generally absent from other applications. Application servers are deployed in at least a 2N configuration, meaning that under peak loads, half of all servers can fail with no noticeable impact; under lesser loads, the majority of servers may fail without effecting the registry's operations. Additionally, because multiple servers are simultaneously serving requests, even in the event that the required number of servers is not available, the impact is generally for performance to degrade rather than the service becoming unavailable.

#### **4. "Unknown issues" raised by using Tokyo as the secondary site location**

*Gartner made the following technical observation in its letter to ICANN:*

*"Running the Registry entirely from the backup Tokyo location raises unknown issues."*

It is difficult to provide a response to this observation because we do not understand what Gartner means by "unknown issues." However, we wish to make the following points regarding the selection of the Tokyo location.

First, we are not contractually bound to the selection of Tokyo or Japan as the location of the secondary site. To date, we have had preliminary discussions with vendors and co-location facilities in Tokyo, but have not entered into any formal agreements. We would be open to the advice of ICANN regarding the location of the secondary site, as long as we felt we could manage the site operationally in whichever location was recommended.

Second, we selected Japan for its excellent network connectivity to the rest of the world, and because of our extensive experience in the region. Our Director of Infrastructure served for five years as a technology manager in Tokyo and Osaka, and we also have additional staff fluent in Japanese.

Third, locating the secondary site in Tokyo has lower operational risk than other candidate offshore locations. This is due to the high quality of technical expertise and networking available, our previous operational experience in the region, and the greater geographic separation provided by Japan as compared to other domestic sites. War, terrorism or natural disaster is less likely to affect sites with both geographic and geopolitical separation than a purely domestic solution.

Finally, we would like to emphasize our solid commitment to firm, industry leading RTO/RPO objectives. Compared to the other leading bidders, we note that neither NeuStar nor ISOC commit to any recovery times or even recovery points. While NeuStar says they have 3-minute synchronization schedules with detailed procedures for identifying and handling delays, they don't commit to any specific times in the remediation part. ISOC and GNR make no mention of recovery times or points at all. Registry Advantage's application contained substantially more technical details about our redundancy and recovery plans than any of the leading competitors.

## **5. Customer Service Languages**

*One of the issues raised by Gartner is that the number of languages to be supported was not specified.*

In its answer to question C38, the DotOrg Foundation stated that it recognizes the importance of – and intends to serve registrants and registrars in various countries where English is not the primary language. Therefore, the Foundation will strive to make its outreach, registrar training, products and services accessible in multiple languages. The Foundation's expansion into multiple languages will begin with the major languages and expand into others as needed, based on consultation with the .org community.

In fact, the Foundation already lists the “coming soon” languages on its website at [www.dotorgfoundation.org](http://www.dotorgfoundation.org):

- Chinese
- English
- French
- German
- Italian
- Japanese
- Korean
- Spanish

These translations of the website are planned for the period immediately following the Foundation's being awarded the right to manage the .org registry. The translations of website materials are an important tool in reaching and educating registrars and registrants located in many different time zones. In addition, once the Foundation begins its proactive outreach activities – through the web, meetings, conference calls, and press activities -- the materials for these activities would likewise be available in multiple languages.

Most registrar support would involve technology and billing based questions, which would be handled by Registry Advantage. Likewise, much of registrar training and OT&E testing will involve Registry Advantage. Currently, the company has staff with Chinese (both Mandarin and Cantonese), French, German, Greek, Korean, Russian, Spanish, Taiwanese and Vietnamese capabilities, and would be prepared to add to such language capacity as needed. In addition to providing access to personnel with these language skills, Registry Advantage will support the DotOrg Foundation by translating materials in several key languages.

In addition to language capabilities within the registry, there is clearly a commitment to language diversity in contemplated products and services. The validation plan, for example, relies on assembling a geographically diverse group of organizations, which can service the.org registrants whose languages they can support. Provided as an attachment to the DotOrg Foundation application is a long and geographically and linguistically diverse list of potential validators, many of whom we have approached about joining the .org registry.

If needed, the Foundation is further prepared to issue a sub-contract to a language translation service with technical knowledge. The Foundation or Registry Advantage, depending on the particular need, would simply call such a service and request a particular language. The service would connect us with a translator, to whom we would give an overview of the customer issue, and conference the customer in on the call. This would alleviate potential miscommunications or misinterpretations with international customers.

### **Equivalent Services to Registrars**

*In addition to specifically questioning the number of languages we support, the Gartner report also seemed to be missing from its review of Criterion 8 information regarding our provision of equivalent service to registrars.*

Please allow us to amplify our answers to questions C19 and C21, where we stated that we intend to fully comply with policies in Appendices H and I of the model Registry Agreement. While we found it unnecessary to restate all of the points in those appendices in the application, itself, because they are well known to ICANN, we have done so here in order to illustrate our commitment. Please see Attachment A to this answer for a draft Code of Conduct and Equivalent Access Plan. Additionally, ICANN can be sure that Registry Advantage is not just familiar with the points in those Code and Plan, respectively, but in fact has built its systems and processes in accordance with their requirements thanks to its contract to operate the .pro registry system.

The Foundation would oversee Registry Advantage's compliance with the .org Code of Conduct and Equivalent Access standards. As we had stated in the application, the Foundation would conduct regular audits, as well as agree to independent reviews at ICANN's request in order to ensure equivalent access and neutrality by the registry.

Similarly, given that Registry Advantage is connected to an ICANN-accredited registrar, Register.com, the Foundation appreciates the potential interest of the community in seeing equal access reinforced through separation of the registry and registrar systems and an organizational conflict of interest compliance plan. Register.com is prepared to institute such a plan, the basic points of which are as described in Attachment B to this answer.

## **6. Operations Testing Environment**

*Gartner's letter to ICANN suggested, "No Operations Testing Environment was proposed" by the DotOrg Foundation.*

This statement suggests that Gartner may have overlooked the discussion of our test environment in question C22 of the application, although Gartner's analysis in Appendix B to their report suggests otherwise. Gartner mentions our test environment as a positive aspect to our proposal several times in the Appendix B analysis.

To clarify, Registry Advantage will provide an Operations Testing Environment as described in section C22. We call this environment TEST (Testing Environment, Support and Training) in our proposal as it will be used for two purposes: (a) to allow existing ICANN accredited .org registrars to test EPP and/or RRP connections with our Shared

Registry System, and (b) to certify potential .org registrars in a customary OTE certification test.

You can judge Registry Advantage's commitment based on our existing Operations Testing Environment for the registrars that currently connect to our systems through EPP and our own proprietary SRP (similar to RRP).

## **7. VeriSign Roles and Responsibilities in the Transition**

Registry Advantage recognizes the importance of establishing clear responsibilities for both the current registry operator as well as the newly selected registry operator throughout the transition process. Without a significant degree of cooperation from VeriSign, it is possible that not all data will be transferred successfully, or a longer than envisioned interruption in services may occur. Because we are not aligned with VeriSign in our application, nor are they partners in our regular course of business, we would not presume the level of support in the transition.

With the exception of providing DNS services for a year, VeriSign's existing .org contract does not specify the type of assistance that they are required to provide during the transition process. As a result, Registry Advantage considers it imprudent to build a migration plan that depends significantly on specific activities undertaken by VeriSign. The transition plan presented in section C18 of the original application materials outlines a transition approach that is minimally dependent on VeriSign for a successful migration. We believe that the spirit of the existing .org contract would require VeriSign to cooperate on at least these essential steps. The specific points on which co-operation from VeriSign would be required are:

- 1) Continued operation of their constellation of DNS servers on behalf of the .org TLD. Initially, the DNS servers would continue to serve a zone file based on registrations in the VeriSign database as of the end of their tenure as .org registry operator. Later, VeriSign would be required to receive updated zone file information from Registry Advantage.
- 2) Provision of registry data to Registry Advantage on a daily basis, beginning 30 days in advance of the registry cut-over. This data would be imported into the Registry Advantage database on an ongoing basis in order to validate the data import methodology, as well as to allow registrars, registrants and the Internet community to identify any potential data errors prior to the final cutover.
- 3) Provision of a final and complete set of registry data immediately after the termination of the current .org contract. This data set would subsequently form the basis for the final and authoritative data import by Registry Advantage.
- 4) Possible reconciliation efforts in the event that discrepancies are discovered between the new registry's database and the legacy data set.

The elements listed above represent the set of activity that Registry Advantage believes is essential to a successful transition, and represent a minimum level of effort and commitment on behalf of VeriSign. To support the migration process, Registry Advantage would work closely with VeriSign, ideally meeting on a weekly basis to verify the completion of various milestones related to the transition process and exchange additional information such as:

- Disclosure of current .org database schema;
- Establishing a database export format used to transmit the data set from VeriSign to Registry Advantage;



- Listing of all current .org registrars;
- Disclosure of IP address ranges used by .org registrars to connect to the SRS;
- Approval of a final migration and transition schedule;
- Transfer of data relating to any current disputed domain names, as well as establishing a mechanism to resolve disputes involving historical transactional data from VeriSign;
- Establishing a mechanism for Registry Advantage to begin updating the VeriSign DNS constellation; and
- Exchange of contact information for key players involved in each party's operations, as well as a clear escalation process.

Important elements produced as a result of these meetings (such as the final migration and transition schedule) would be published as part of the new registry's outreach efforts to registrars, registrants and the Internet user community. Registry Advantage would also propose continuing these meetings through at least the first 30 days after the initial cutover in order to ensure that any post-transition issues were effectively communicated between the two parties.

In the event that VeriSign were willing to undertake additional activities in order to ensure the smoothest possible transition, Registry Advantage would further propose that VeriSign perform the following:

- Update WHOIS server software to automatically redirect queries to the new .org Whois servers, or simply provide a referral entry for any queries made for .org names;
- Send notices to existing .org registrars to provide details of the transition process;
- Update relevant web pages, mailing lists, telephone recordings, and other public data sources to provide a referral to the new operator's comparable resources;
- Continue to provide WHOIS service during the brief interval in which Registry Advantage is importing the final data set, so that the service is continuously available to the public throughout the transition; and
- Prohibit transfers starting five days prior to the cutover, so that all transfer events have completed prior to the transfer of operator.

Registry Advantage has also developed contingency plans for completing the migration even in the event of minimal or no co-operation from VeriSign. These contingency plans include:

- Using public data sources, such as Bulk Whois and the zone file access program to build the initial registry database during the final 30 days leading to the cutover. This approach does not have the full set of data required by the registry, but has sufficient information to provide functional registry services.
- Using the registry data escrowed as part of VeriSign's current operation of the .org registry in order to build the final registry database. This step would require that ICANN recover the data from the escrow provider under the terms of its contract with VeriSign, and turn over the relevant files to Registry Advantage. We believe that ICANN would be fully within its rights as a beneficiary of the

escrow agreement to access the data for a task as critical as the stable transition of the registry.

- Working with registrars to compare the data in these alternate data sources with the registrars' own data for each domain.
- More rapid transition from VeriSign's name server constellation to the Registry Advantage name servers, possibly including a complete cutover to Registry Advantage name servers upon the termination of the registry contact. This scenario might result in some recently registered names failing to resolve for a brief period of time.

Note that it is extremely unlikely that any of these alternate approaches would be required, but they represent final fallbacks in the event that VeriSign fails to meet its obligations under the existing .org contract.

## 8. Relevant Operational Experience

We believe that Gartner has placed an undue weight on the experience of certain applicants as current registry operators. While it is certain that managing a large registry provides valuable expertise applicable to the operation of .org, evaluators seem to have overlooked three key issues in choosing to make this aspect of the applications of paramount importance.

First, the Gartner report does not discuss the technical problems that have occurred with several of the new gTLD registries. Significant technical problems occurred that prevented registrars from gaining full access to the registries during the launch of the gTLD registries managed by Afilias and NeuStar. These problems are well documented, and we were disappointed that Gartner did not comment on whether such issues were likely to recur with the launch of a much larger registry by either party.

Second, the scaling problems involved with the operation of a registry with as many names as .org have simply not fully manifested themselves in a registry with a million names or less. As Register.com learned from providing DNS service for over three million domain names, and Nominet learned<sup>2</sup> by operating the second largest ccTLD registry in the world, a number of scaling issues present themselves at the level of approximately two million domain names. All registries that are operating fewer than this number of names may need to overcome significant technical hurdles in order to operate the .org registry.

Additionally, because the .info and .biz TLDs do not yet have domain names subject to expiration and non-renewal, they do not suffer from the problems of "add storms" currently faced by the .org registry. While Registry Advantage does not currently operate a registry that meets either of these criteria, we have conducted extensive testing to ensure that our systems were not only capable of supporting the full scope of the .org registry and its zone file, but also to ensure that registry operations would continue normally even under the extreme conditions of an add storm. We believe that this type of testing provides significantly greater validation than the mere operation of a registry at a scale significantly smaller than required for .org.

Finally, we note that the Gartner report did not discuss relevant operational experience from related non-registry activities. For example, Register.com currently provides services such as registration, thick Whois, and DNS for over two million domain names.

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<sup>2</sup> See Section C17.1 of the Organic Names .org proposal at <http://www.icann.org/tlds/org/applications/organic/iii.html> : "The experience gained at Nominet UK - a registry roughly 150% the size of .org, is that there are some unusual file size scalability issues at the level of about 2 million registrations."

Retail domain name registrations actually require significantly more resources and complexity (multi-step process versus atomic transactions; real-time billing versus batch reporting and invoicing; etc.) than SRS-based registry operations. Additionally, Register.com also provides registration services through its Third Party Protocol, which significantly exceeds the capabilities of an SRS by allowing registration-related activities such as the addition, modification and deletion of domain names, as well as enhanced capabilities such as provisioning authoritative DNS records. The systems upon which the Registry Advantage infrastructure is based have a proven track record of handling over ten thousand domain name registrations per day, significantly exceeding the historical peak requirements of the .org registry. Register.com has been providing these services for a significantly greater time than any new gTLD operator, having begun activities as the first live testbed registrar in June of 1999. We believe this experience forms a thorough basis for migrating and operating the .org registry within the extremely limited timeframe available.

## Attachment A

The points to be included in our Code of Conduct and Equivalency Plan are as follows and shall be implemented by our vendors, as applicable. Therefore, the "Registry" refers generally to the Foundation and its vendors, specifically Registry Advantage.

### Code of Conduct

1. Other than in connection with the distribution of dividends or other profits to shareholders or incidental benefits that might arise from public information regarding .org, the Registry will not directly or indirectly, show any preference or provide any special consideration to any one versus another ICANN-Accredited Registrar in the .org Registry, as those terms are defined by ICANN.
2. All ICANN-Accredited Registrars in the .org registry shall have equivalent access to the Registry Services.
3. The Registry shall not in any way attempt to warehouse or register domain names in its own right, except for names designated for operational purposes in compliance with Subsections 3.6.1 and 3.6.2 of the Registry Agreement. In its Monthly Report to ICANN, the Registry shall include a list of all names designated for operational purposes.
4. Any shareholder, subsidiary, affiliate, or other related entity of the Registry that also operates as a provider of registrar services shall maintain separate books of account with respect to its registrar operations.
5. Neither the Registry, nor its owners, subsidiaries, affiliates, or other related entities shall have access to user data or proprietary information of an ICANN-Accredited Registrar, except as necessary for registry management and operations.
6. The Registry will ensure that no user data or proprietary information from any ICANN-Accredited Registrar is disclosed to its affiliates, subsidiaries, or other related entities, except as necessary for registry management and operations.
7. Confidential information about the Registry's business services will not be shared with employees of any DNS registry operator or ICANN-Accredited Registrars, except as necessary for registry management and operations.
8. The Registry will conduct internal neutrality reviews on a regular basis (may be annual). In addition, the Registry and ICANN may mutually agree on an independent party that ICANN may hire, at ICANN's expense, to conduct a neutrality review to ensure that the Registry complies with all the provisions of its Code of Conduct. The Registry will provide the analyst with reasonable access to information and records appropriate to complete the review. The results of the review will be provided to ICANN and shall be deemed to be confidential and proprietary information of the Registry.

## Attachment A (continued)

### Equivalent Access Plan

1. All ICANN-Accredited Registrars (including shareholders or owners of Registry vendors that act as a registrar) will connect to the Registry-Registrar Protocol via the Internet by equivalent connection(s) and by utilizing the equivalent maximum number of IP addresses and SSL certificate authentications. Notwithstanding the foregoing, any ICANN Accredited Registrar's access may be proportionately increased based on a need demonstrated by the past level of queries by such registrar, provided that such level of access is available to other similarly situated ICANN Accredited Registrars.
2. The Registry is making commercially reasonable efforts to make both the initial version of the Registrar toolkit software required for domain name registration, and any updates to that toolkit, available to all ICANN-Accredited Registrars at the same time.
3. All ICANN-Accredited Registrars have equivalent level of access to:
  - i. Registry customer support personnel;
  - ii. Registry resources, as made available from time to time, to resolve Registry/Registrar or Registrar/Registrar disputes and technical and/or administrative customer service issues;
  - iii. Registry Data to reconcile their registration activities from registry Web and ftp servers. Each ICANN-Accredited Registrar's data will be treated as confidential, per the .org Code of Conduct.
4. All ICANN-Accredited Registrars are enabled to perform basic automated registrar account management functions using an equivalent Registrar toolkit made available to all Accredited Registrars by the Registry Operator. All account information is treated as confidential, per the Registry Code of Conduct.
5. The Registry-Registrar Protocol does not include any algorithms or protocols that differentiate among ICANN-Accredited Registrars with respect to functionality, including database access, system priorities and overall performance.
6. All Registry Operator officers, directors, shareholders, employees, agents, consultants, and contractors are directed not to give preferential treatment to any individual ICANN-Accredited Registrar.
7. The Registry does not provide preferential pricing structures, promotions or other economic terms with respect to Registry Services to any individual ICANN-Accredited Registrar that are not available to all ICANN-Accredited Registrars.
8. The Registry will certify regularly that it has complied with the terms of the Registry Operator Code of Conduct and the Equal Access and Nondiscrimination Practice Plan.

## Attachment B

### Organizational Conflict of Interest Plan for Register.com

1. Independence for all Registry Advantage employees. In particular, staff to be recruited primarily from the open market. All employees will be required to enter into agreements to protect proprietary and sensitive registry information.
2. By agreement with the DotOrg Foundation, Registry Advantage would have contractual duties to the registry.
3. Financial Separation of Registry Advantage, including a requirement that separate financial statements are prepared using United States GAAP accounting standards. Such financial statements will account for the Registry's own costs, revenues, cash flow, etc. as a separate entity, using distinct systems and accounting functions. Reasonable and independently auditable internal accounting controls will be in place to ensure the adequacy of these systems and functions. The accounting and operational procedures will be established in such a fashion that no detailed customer account information relating to any individual ICANN-Accredited Registrar will be available to any other ICANN-Accredited Registrar.
4. Separate business premises from any ICANN-Accredited Registrar.
5. Physical Barriers to limit access to Registry Advantage by non-Registry Advantage employees, other than authorized DotOrg Foundation employees or others designated by the Foundation (e.g., Kintera or other vendors, as necessary).
6. Nondisclosure agreements, which will protect sensitive or proprietary data.
7. Staff Training of all Registry Advantage personnel, as well as other employees (e.g., in the Foundation) who have a need to know Registry business. The formal training will introduce employees to organization conflict of interest concepts and compliance and will provide the staff members with a clear understanding of Registry Advantage policies, particularly the Equivalent Access Policy and the staff members' responsibilities. Such training will be required before any potential staff member is given access to Registry material, followed by annual refresher training.
8. Written annual certification, by each employee, demonstrating his or her compliance.

Registry Advantage's General Manager will ensure that the Registry and its employees do not release any information to any ICANN-Accredited Registrar, or their respective employees, that could be used by an ICANN-Accredited Registrar to the detriment of any other ICANN-Accredited Registrar regardless of the official stated sensitivity of the information. Under no circumstances will the General Manager approve the release of Registry Sensitive Information to any ICANN-Accredited Registrar.