



ICANN .net RFP Evaluation Final Report

Telcordia Technologies System Documentation
BD-AR-RFP-EVAL-004
Issue 4
May 2, 2005

ICANN .net RFP Evaluation Final Report

Prepared for Telcordia Technologies by:

Applied Research

Technical contact:

Telcordia Technologies

One Telcordia Drive
Room 1T203
Piscataway NJ 08854

Telephone: 732.699.7002

Fax: 732.336.3570

Attention: ICANN Project Manager

Copyright © 2005 Telcordia Technologies, Inc. All rights reserved.

AR Process Template Issue 1.0, August 2004

Trademark Acknowledgments

Telcordia is a registered trademark of Telcordia Technologies, Inc.

Change History

Issue	Date	Revised By	Description of Change	Page(s)
1	3/28/05	ICANN Team		58
2	3/31/05	ICANN Team	Fix DENIC database error and ranking	29-30, 56-57
3	4/28/05	ICANN Team	Update based on respondent concerns	40, 46, 56
4	5/27/05	ICANN Team	Update of release date to fix typo	Cover

Table of Contents

1. Executive Summary	6
1.1 Evaluators Report on .NET RFP Responses.....	6
1.2 Executive Summary of the Findings	6
1.3 Evaluation Procedure.....	6
1.4 Scoring of Financial Criteria	8
1.5 Weighting of Criteria.....	9
1.6 Evaluation of Public Comment.....	10
2. TECHNICAL AND FINANCIAL INFORMATION.....	11
2.1 ICANN Policy Compliance	11
2.2 Equivalent Access for Registrars.....	13
2.3 Registry Operations	16
2.4 Revenue and Pricing Model, Financial Strength and Stability.....	18
2.4.1 Revenue and Pricing Model	18
2.5 Technical Competence	19
2.5.1 Outline Technical Capabilities	19
2.5.2 General description of proposed facilities and systems.....	21
2.5.3 Stability of resolution and performance capabilities	22
2.5.4 Operational scalability.....	25
2.5.5 Registry-registrar model/protocol and shared registration system	27
2.5.6 Database Capabilities	29
2.5.7 Geographic network coverage	30
2.5.8 Zone file generation.....	32
2.5.9 Zone file distribution and publication	32
2.5.10 Billing and collection systems.....	33
2.5.11 Backup.....	34
2.5.12 Escrow	36
2.5.13 Publicly Accessible WHOIS Service	36
2.5.14 System Security and Physical Security.....	38
2.5.15 Peak capacities.....	39
2.5.16 System reliability.....	39
2.5.17 System Outage Prevention.....	40
2.5.18 Support for IDNs, IPv6, DNSSEC	40
2.5.19 System Recovery Procedure.....	41
2.5.20 Technical and Other Support.....	43
2.6 Security and Stability.....	45
2.6.1 Provision for Registry Failure	45
2.6.2 Provision for Business Failure.....	47
2.6.3 Security.....	48
2.7 Additional Relative Criteria.....	49
2.8 Transition or Migration Plan	54

3. Applicant Ranking.....	56
3.1 Ranking at a glance.....	56
3.2 Evaluation Criteria.....	56
3.3 General Observations	57
3.4 Respondents Plusses and Minuses.....	57

1. Executive Summary

1.1 Evaluators Report on .NET RFP Responses

This report contains the results of the evaluation of the responses to the .NET reassignment RFP. The report consists of four sections: an executive summary of the findings, a description of the procedures that were used to evaluate the responses, the finding by RFP section, and the overall evaluation.

1.2 Executive Summary of the Findings

The evaluators find that all of the vendors have the capability to run the .NET registry. The distinguishing characteristics are largely differences in experience, risk, and price. The evaluators find that while all five applicants could run the .NET registry, their scores on the RFP evaluation resulted in them stratifying into three groups: Sentan and VeriSign are the leaders, Afilias and DENIC are in the second group and CORE++ is third. Within the first group, VeriSign has a small numerical edge over Sentan that is not statistically significant given the methodology used to rate the RFP responses. The stratification between the lead group (Sentan, VeriSign) and the other vendors is statistically significant.

The results of the site visits were not used to arrive at this ranking. However, in our professional judgment the results correspond to our impressions during the site visits. Sentan and VeriSign are highly professional organizations with mature quality processes. The risk to the operation of .NET is minimal if either organization is awarded the contract.

1.3 Evaluation Procedure

The evaluation of the .NET reassignment was a formal RFP process. Telcordia constructed a rigorous process to evaluate the proposals submitted in response to the RFP¹. The ICANN .net RFP² criteria are divided into two categories: absolute and relative. Absolute criteria were assigned either a "red" or a "green" score. As per the RFP, had any of the proposals received one or more "red" scores on absolute criteria they would have been eliminated from the process, without regard to how well or poorly the vendor performed against the relative criteria.

¹ Throughout the process scores of Red, Yellow, Green or Blue were used. Although specific definitions of the scores were developed for each criteria in the RFP (process described below), the intuitive meaning of these scores is: Red = unacceptable, Yellow = has serious flaws or issues, Green = acceptable, Blue = exceeds requirements.

² ICANN .net Request for Proposals, <http://www.icann.org/tlds/dotnet-reassignment/net-rfp-final-10dec04.pdf>

All vendors met the absolute criteria and have been evaluated solely on the basis of the relative criteria, without regard to the absolute criteria, except where the RFP explicitly stated otherwise. Some relative criteria were closely related to, and differed only in a matter of degree from, some absolute criteria.

The following procedure was used to ensure that the evaluation was done fairly. First, prior to the Telcordia team reading the RFP responses, a core group of senior Telcordia employees generated a scoring sheet by decomposing the .NET RFP into its sub-components, with each request for an information element identified as a scoring element. For each scoring element the core group developed metrics to be used to score the element as Red/Green for absolute criteria and Red/Yellow/Green/Blue for relative criteria. Criteria which were both absolute and relative were scored Red/Green/Blue. The metrics were derived from the RFP, the current .NET agreements, the newer agreements for other domains, and industry best practice. The team also identified a set of weightings to be applied to the findings. Following the generation of the scoring sheets, and prior to the start of scoring, the ICANN reviewed and provided feedback on the sheets and the weightings.

For each section of the scoring sheets, except for the financial analysis as described below, two people independently read and scored all five of the proposals. At completion of the preliminary scoring process the lead for the section was responsible for ensuring consensus on the score. The section lead then provided a preliminary rollup of the scores for the section.

Scoring elements where a proposal scored a red or a yellow were then sent to ICANN for forwarding to the vendors. The vendors were restricted to two pages of response per scoring element. The red and yellow sections were rescored based on the responses to the preliminary scoring.

In addition to the RFP proposals and responses to the preliminary scoring, site visits were made to a site chosen by each vendor. The vendors were given an agenda in advance and told that time would be restricted to six hours. The purpose of the site visits was to validate, where possible, information that was contained in the proposals.

Additionally, given the complexity of the DNS environment, ICANN formed a small, technical panel consisting of DNS experts in the Internet community to support the evaluation team by providing advice regarding DNS issues. The members of this panel are:

Randy Bush
Scientist, IJ
Bainbridge Island, Washington, USA

Kencho Cho
IJ Lab (a division of Internet Initiatives Japan, Inc.)
Tokyo, Japan

Patrik Fältström
Cisco Systems, Consulting Engineer
Helsingborg, Sweden

Petur Petursson, CEO, and
Sigfus Magnusson
Men & Mice
Reykjavik, Iceland

The DNS Expert team consulted with the Telcordia .NET RFP Evaluation team as required, but did not participate in the scoring process.

1.4 Scoring of Financial Criteria

The RFP has the absolute requirement that each vendor "...must demonstrate sufficient *financial strength and stability*, based upon its existing financial condition and its proposed business model for operation of the registry, to provide reasonable certainty that it will be able to fulfill its obligations over the life of the .NET registry agreement."

The term 'able to fulfill its obligations' has been clarified by ICANN (Letter of 2 February 2005) as being able to finance all necessary capital and staffing commitments under varying demand conditions. "The financial plan must demonstrate a robustness that ensures the continued ability to invest substantially in (among other things):

1. security measures that protect assets against physical and cyber attacks;
2. stability measures such as periodic equipment and software upgrades and sufficient capacity to adequately serve peak demands;
3. Innovation in order to promote competition and provide new and improved services to registrars and registrants."

The evaluation used the financial information provided by the vendors to project income statements and cash flow statements for the duration of the award. The rating awarded each vendor depends on the financial strength we found by modeling each vendor's cash resources and needs over the life of the contract, by applying a standard financial modeling approach.

The RFP requires the provision of (a) financial statements for the vendor (or, if the vendor is a wholly owned subsidiary of another entity, for the vendor and such other entity on a consolidated basis): three years of financial statements (including balance sheet, income statement, cash flow statement and statement of stockholders' equity) and (b) the vendor's business plan for the operation of the registry, which is to include revenues, prices, products/services sold, staffing, expenses, property plant and equipment, cash sources and uses. The vendors were to provide three demand scenarios: high, medium and low.

For the evaluation Telcordia analyzed the information each vendor provided, the goal being to create a modeled cost function calibrated to each vendor, so that we could use common scenarios across all the vendors. This turned out to be more difficult and less clear-cut than anticipated because some vendors did not provide staffing, expense, or capital outlay information for their different scenarios. This meant that modeling their cost variations with

names in service had to depend on the variation of these costs with the growth of the business over time. Telcordia used names in use as the common driving variable for all scenarios.

The scenarios provided by the vendors varied widely, from zero growth to very rapid growth. Telcordia regards zero growth as too unlikely an outcome to be a standardized scenario, and so used a minimum growth of 4% in names used each year. This is about half the lowest growth rate experienced so far. For the midrange and high growth scenarios we used 10% and 18% respectively, which lie within the range of scenarios provided by the respondents. We also assumed a standard average length of contract of 15 months.

The primary test is whether overall cash resources available fall below the cash required to cover projected capital needs and operational costs. If this test is failed at any point, then the evaluator will examine the balance sheet for equity reserves and test accounting ratios used in insolvency prediction or credit-worthiness models (as needed).

1.5 Weighting of Criteria

Early in the process it was realized that some elements of the RFP were more important than others. As part of the process of developing the scoring sheets, Telcordia produced a rough ranking (or ordering) of the various RFP criteria. These rankings of the relative criteria utilized ICANN's core principles and priorities as presented by the ICANN charter. Note that per the .Net Request for Proposals: "Relative criteria are those criteria that ICANN has determined will be most helpful in distinguishing the otherwise qualified vendors -- those which satisfy all the absolute criteria -- from each other on the basis of enhanced stability, security, competition, and services". Using these principles, the following priority for relative criteria is established:

- High - those relative criteria which reflect the need to preserve the stability and security of the Internet systems, including:
 - Technical Competence
 - Registry Operations
- Medium - those relative criteria which reflect core ICANN principles, such as promoting and sustaining competition, including:
 - Equivalent Access for Registrars
 - Support in additional languages
 - Registry Code of Conduct and other commitments to ensure that all registrars receive equivalent access
 - Revenue and Pricing Model; Financial Strength and Stability
 - The per-name price charged to registrars with lower committed prices being preferable to higher prices.
 - Additional Relative Criteria
 - The degree to which the vendor's proposal promotes competition in the registration of domain names
- Low - those criteria which reflect other ICANN principles
 - The degree to which a vendor's business model relies on multiple, rather than sole source suppliers to reduce the impact of failure by any one supplier
 - The degree to which a vendor's proposal results in improved implementation of, and support for, GNSO policies, such as transfers and deletes

1.6 Evaluation of Public Comment

The ICANN forwarded to Telcordia the public comments made about the vendors. Telcordia read these comments and gave appropriate consideration.

2. TECHNICAL AND FINANCIAL INFORMATION

2.1 ICANN Policy Compliance

RFP Criteria: The successor .NET registry operator must comply with all existing consensus policies of ICANN and must agree to comply with all future consensus policies of ICANN. This is an absolute criterion.

Describe in detail your method for implementing ICANN's Inter-Registrar Transfer Policy. This is a relative criterion.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.1. ICANN Policy Compliance (absolute)	Green	Green	Green	Green	Green
2.1. ICANN Policy Compliance (relative)	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Description of method to comply with the Inter-Registrar Transfer Policy, including holder-authorized transfers, ICANN-approved transfers, the Transfer Dispute Resolution Policy, and use of the standardized forms.
2. Compliance with the Uniform Domain Name Dispute Resolution Policy
3. Compliance with the WHOIS Data Reminder Policy
4. Compliance with the WHOIS Marketing Restriction Policy
5. Compliance with the Restored Names Accuracy Policy
6. Complies with the Expired Domain Deletion Policy
7. Agreement to comply with all future consensus policies of ICANN

General Observations

General observations and rankings are as follows:

For 2.1 all vendors agreed to comply with all current and future ICANN consensus policies, and provided a description of their method for complying with the Inter-Registrar Transfer Policy. All vendors provide organizational support for assuring compliance, with a responsible compliance officer and internal review processes. All vendors have a track record of involvement with the process for developing consensus policies, which increases confidence that they can comply with new policies in a timely fashion.

Respondents' Plusses and Minuses

Afilias:

+: Afilias provides some detail on compliance with the dispute resolution policy and methods for assuring compliance with future policies.

+: Afilias has an external Technical Advisory Group integrated into its compliance processes.

CORE++

+: Unlike other vendors, CORE++ makes an explicit commitment to each existing policy, showing awareness of specific issues and offering some specific support mechanisms.

-: CORE++ makes no explicit mention of external review of compliance.

DENIC

+: DENIC explicitly describes domain transfer procedures that address the Transfer Dispute Resolution Procedure requirements.

-: DENIC makes no explicit mention of external review of compliance.

Sentan Registry

+: Sentan provides substantial discussion of its approach for assuring the correctness and timeliness of the transfer process.

+: Sentan explicitly addresses automated mechanisms for supporting dispute resolution.

+: Sentan explicitly provides mechanisms to protect the privacy of domain name registrants and mitigate WHOIS data mining.

-: Sentan makes no explicit mention of external review of compliance.

VeriSign, Inc.

+: VeriSign describes its thorough compliance process, including external compliance audits of itself and its conducting annual compliance reviews of its registrars. Its compliance with future policies is supported with a well-defined life-cycle process.

+: VeriSign provides a secure on-line tool to support dispute resolution.

2.2 Equivalent Access for Registrars

RFP Criteria: All ICANN-accredited registrars must be allowed to qualify to register names in .NET. The registry operator must treat all registrars that have qualified to operate as .NET registrars equivalently.

- (a) Describe in detail your methods of providing registry services on an equivalent basis to all accredited registrars having registry-registrar agreements in effect. Your description should include any measures intended to make registration, technical assistance, and other services available to ICANN-accredited registrars in multiple time zones and multiple languages. Please include in your description the languages that you agree to support if you are selected as the .NET registry operator. Support in English is an absolute criterion. Support in additional languages is a relative criterion. In addition, describe the Registry Code of Conduct and other commitments you propose to make to ensure that all such registrars receive equivalent access to registry services. In preparing your response to this item, you may wish to refer to Appendices H and I of the registry agreements ICANN has entered into for other unsponsored TLDs (e.g., .biz, .com, .info, .name, .org and .pro).
- (b) VeriSign, Inc., the current operator of the .NET registry uses a registry-registrar protocol (RRP) documented in RFC 2832. At the time of the transition, the selected successor operator will be required to continue to support the RRP (unless a migration of registrars in .NET to another protocol has already been completed by that time). In addition, the selected successor operator will be required to implement support for Version 1.0 of the Extensible Provisioning Protocol as specified in RFC's 3730, 3731, 3732, 3733, 3734, and 3735. Provide a detailed description of your plan for supporting RRP at the time of transition, for supporting EPP 1.0, and for providing registrars with a smooth, low-cost migration path from RRP to EPP.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.2 Equivalent access for registrars: absolute component	Green	Green	Green	Green	Green
2.2 Equivalent access for registrars: relative component	Green	Blue	Green	Blue	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

Subsection a:

1. Detailed method for providing registry services on an equivalent basis.
2. Provision of registration, technical assistance and other services in multiple time zones.
3. Languages to be supported. Note that support of English is an absolute requirement, while the extent of support for other languages is a relative criterion.
4. The Registry Code of Conduct and other commitments to ensure that all registrars receive equivalent access to registry services. Sub-criteria included

- a. Equal resources
- b. All registrars connect to the Shared Registration System Gateway via the Internet by utilizing the same maximum number of IP addresses and SSL certificate authentication.
- c. No preferential treatment for affiliates.
- d. No disclosure of data to affiliates
- e. Must not include any algorithms or protocols that differentiate among ICANN-Accredited Registrars with respect to functionality, including database access, system priorities and overall performance.
- f. The Registry Operator has not provided preferential pricing structures, promotions or other economic terms to any individual ICANN-Accredited Registrar which are not available to all ICANN-Accredited Registrars.
- g. Upon completion of beta testing, the Registry Operator made both the initial version of the Registrar toolkit software and any updates to that toolkit available to all ICANN-Accredited Registrars at the same time.
- h. All ICANN-Accredited Registrars have the same level of access to Registry customer support personnel via telephone, e-mail and the Registry website.
- i. Registry Operator officers, directors, employees, agents, consultants and contractors have been directed not to give preferential treatment to any individual ICANN-Accredited Registrar.
- j. The Registry Operator has not provided preferential pricing structures, promotions or other economic terms to any individual ICANN-Accredited Registrar which is not available to all ICANN-Accredited Registrars.
- k. Registry Operator has complied with the terms of the Registry Operator Code of Conduct and the Equal Access and Nondiscrimination Practice Plan.

Subsection b:

1. Initial support for RRP
2. Support for EPP (initially or in the future)
3. Plan for a smooth, low-cost migration path from RRP to EPP

General Observations

General observations and rankings are as follows:

a) All the vendors met the absolute requirements for 2.2.a, and offered 24x7x365 support, OCI compliance (where appropriate), and a solid code of conduct. All allow for mutually-agreed 3rd-party external neutrality reviews; Sentan and VeriSign commit to sponsoring such independent audits themselves. All except Afilias explicitly provide mechanisms for access control to assure fair access to resources. All provide support for multiple additional languages, with CORE++, and Sentan providing more extensive approaches. Sentan went further than the others in thinking through the needs of non-English-speaking registrar staff.

b) All the vendors met the requirements for 2.2.b, with parallel support for both protocols for a period, and available testing environments and toolkits for registrars. Sentan also addressed testing to ensure compatibility between their RRP implementation and the incumbent's.

Respondents' Plusses and Minuses

Afilias:

-: Afilias has in-house technical support in English. They will support 9 other languages by using a translation service to provide on-demand real-time voice translation and off-line written translation. Their translation service supports over 100 languages.

-: Afilias did not explicitly address fairness of access to resources.

CORE++

+: CORE++ will provide technical support for 8 other languages, explicitly including voice, email, web, and fax. However, they do not mention any additional language support by 3rd-party translation services.

DENIC

-: DENIC has limited availability of helpdesk support for languages other than English, although Web access is available in 7 languages.

Sentan Registry

+: Sentan commits to regular external audits of compliance with the code of conduct at its own expense.

+: Sentan provides in-house technical support in 8 languages, with 3 more within 12 months. Sentan provides WHOIS support in 8 languages and provides instant messaging access to support to ease communication with non-English-speakers. Sentan also uses 3rd-party translation services for over 100 languages.

+: For protocol support, Sentan will ensure compatibility of their RRP with the incumbent's RRP, testing in advance of a transition. They commit to supporting revisions of EPP within 135 days of their becoming IETF Proposed Standards.

VeriSign, Inc.

+: VeriSign commits to sponsor regular external audits of compliance with its code of conduct. Their compliance process for themselves and their registrars is notably thorough.

-: VeriSign supports 4 languages in-house and uses 3rd-party voice translation services for over 100 languages.

2.3 Registry Operations

RFP Criteria: The successor .NET registry operator must provide name registration within the time specified in the Appendix D to the existing .NET registry operator agreement. This is an absolute criterion. The ability to provide additional registry services and/or the ability to provide name registration faster than the specifications on Appendix D are relative criteria. An assessment of this ability will include the evaluators' assessment of the factors described below.

(a) Provide a full description of all registry services you propose to provide and demonstrate your technical and legal ability to provide them, including your prior experience offering these or similar services. If you propose to offer any registry services that you believe are not now offered, include for such services your assessment of the benefits and burdens associated with such new services, as those benefits and burdens apply to registrants and registrars. In addition, describe the technical components and aspects of the planned registry services, and how you will support the same.

(b) To enable the evaluators to assess your capability (both technical and financial) to deliver the registry services you propose to provide, please include the following information:

(i) A detailed description of your current business operations, including (A) CORE capabilities in registry/database and Internet related operations and (B) the services and products you currently offer, with data on how long you have offered them on the current scale. To the extent this description does not fully capture your ability to provide the registry services you propose to offer, add the appropriate supplementary information to fully describe that ability.

(ii) Whether you currently provide any domain name registration services and describe such services.

(iii) A description (including location) of facilities (including available network capacity) available to house staff and equipment necessary to operate the registry.

The evaluators will engage in procedures and performance testing to evaluate each vendor's technical ability to achieve and support current and planned business operations.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.3. Registry Operations: absolute component	Green	Green	Green	Green	Green
2.3. Registry Operations: relative component	Green	Green	Green	Green	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Name registration within the time specified. Note that being faster than the requirement is a relative criterion.
2. Additional registry services, including

- a. Description of all proposed registry services
 - b. Technical ability to provide all proposed registry services (covered in more detail in 2.5)
 - c. Legal ability to provide all proposed registry services
 - d. Prior experience in providing all proposed registry services
 - e. Benefits and burdens of proposed new registry services
3. Description of current business operations, including
- a. Domain name registration services currently provided
 - b. Facilities to operate registry (covered in more detail in 2.5)

General Observations

General observations and rankings are as follows:

All vendors credibly offered to provide name registration within the required time and to provide a variety of beneficial services. VeriSign demonstrated significantly faster registration times. All offer IDN, IPv6, and DNSSEC support. All except VeriSign offer thick registry support. All except DENIC and Sentan plan to support an auction model for deleted names. All show technical and legal ability to provide their proposed services; all except CORE++ explicitly address WHOIS privacy issues in other proposal sections. All described the benefits of proposed services but only Sentan gave detail on burdens. All except CORE++ currently provide services on a scale comparable to .net.

Respondents' Plusses and Minuses

Afilias

None.

CORE++

+: CORE++ offers a domain protection service, name server sanity check, and WDRP.

- CORE++ has prior experience in providing registry services but at a smaller scale than .net.

DENIC

+: DENIC offers a "pre-delegation check" service and a "domain sync" service.

-: DENIC does not explicitly offer to support an auction model for deleted names.

Sentan Registry

- + : Sentan offers a wide range of additional services, and provided a solid discussion of both their benefits and burdens.
- : Sentan does not explicitly offer to support an auction model for deleted names.

VeriSign, Inc.

- + : VeriSign demonstrated registration times notably faster than the requirement.
- + : VeriSign offers a wide range of additional services, and plans to offer further security service tools.
- + : VeriSign has experience offering registry services at a scale significantly larger than .net.
- : VeriSign does not offer thick registry

2.4 Revenue and Pricing Model, Financial Strength and Stability

2.4.1 Revenue and Pricing Model

RFP Criteria: Each vendor must demonstrate sufficient *financial strength and stability*, based upon its existing financial condition and its proposed business model for operation of the registry, to provide reasonable certainty that it will be able to fulfill its obligations over the life of the .NET registry agreement. This is an absolute criterion. The per-name price charged to registrars is a relative criterion, with lower committed prices being preferable to higher prices.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.4.A Revenue and Pricing Model (absolute)	Green	Green	Green	Green	Green
2.4.B Pricing rank (relative)	1	4	5	2	2

Evaluation Criteria

The primary test is whether overall cash resources available fall below the cash required to cover projected capital needs and operational costs. If this test is failed at any point, then the evaluator will examine the balance sheet for equity reserves and test accounting ratios used in insolvency prediction or credit-worthiness models (as needed).

Methodology: Produced business models for all five respondents using standard scenarios to provide the same financial test to all. Our standard scenarios were 4%, 10% and 18% growth, which included most of the range of vendors' scenarios but excluded the zero growth case some used as their most conservative. We regarded this outcome as too unlikely to be part of a common risk assessment.

The methodology required evaluators to “reverse engineer” the business models presented, to estimate the financials in the standard scenarios. Pricing was ranked numerically by analyzing the proposed pricing to the registrars.

The remainder of this section contains vendor proprietary information, and is provided to ICANN under separate cover.

2.5 Technical Competence

Criteria: The .NET registry operator must meet the specifications of the current .NET registry contained in the following sections of the current .NET registry agreement listed below (if a “thick registry” model is being proposed by applicant, the specifications for the current .org agreement, rather than the current .NET agreement, shall apply in the case of Appendices O, P and Q). This is an absolute criterion. The degree to which applicant’s proposal commits applicant to exceed these specifications shall be relative criteria.

Vendors are judged for section 2.5 first on absolute criteria. All scores are green, and are not included in the comments below. Sections 2.5.1 through 2.5.20 deal with the relative criteria only.

2.5.1 Outline Technical Capabilities

RFP Criteria: Outline your technical capabilities. Provide a description of your technical capabilities, including information about key technical personnel (qualifications and experience), size of technical workforce and access to systems development tools. Outline any significant prior technical achievements.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.a Outline Technical Capabilities (relative)	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Does the vendor describe adequate technical competence to operate the registry?
- Are qualified personnel with sufficient education or experience available?
- Is the size of the workforce sufficient to operate the system?
- Is there a demonstrated awareness and usage of tools and adherence to best practices?
- Are sufficient prior technical achievements or experiences described?

General Observations

All vendors describe sufficient technical staff and capabilities to operate the .NET registry.

Respondents Plusses and Minuses

Afilias:

Currently runs .org and .info. Managed transition of .org. Currently operates the .info domain with service constraints similar to those proposed for .NET. Personnel have experience in high availability systems, database design and operations, and in managing existing registries. Plans to add 46 staff in year one, and ten more the next year. DNS provider has 45 employees. Uses Rapid Applications Development (RAD) methodology, Java based tools for manipulating XML and building web pages.

CORE++:

Extensive knowledge of EPP, RRP, and BIND. 5 leading technical personnel have 70 years industry experience. Technical personnel were involved in design and development of CORE's registry software and design of IP networks. 13.5 headcount for administration. Total projected staff of 69. Use of UML, XSLT, IDE's, testing frameworks.

DENIC:

Implemented internationalized domain names. Participated in ENUM trials in Germany Delineated its technical competencies by subject area. Lists staff with experience in real time systems, software quality, and experience in DNS-related efforts in industry. Half of programming staff certified Java programmers. Detailed breakdown of staffing plan. Currently has 85 employees, and plans to add 42. Plans to add 5 more system administrators (for 19 total) and two more developers (for 12 total). Use of UML, IDE's, testing tools. Has administered the .de ccTLD for 10 years.

Sentan:

Experience with IDNs and DNSSEC. Senior technical personnel with average 15 years industry experience in areas including security, registry services and IDN's. Over 40 personnel. Use of UML, XML tools. Currently manages TLDs: .biz, .us, .jp, .cn, .tw. Performance constraints on .biz are similar to those proposed

VeriSign:

Operation of DNS infrastructure with 100% availability for 7 years. Awards for infrastructure components. Support of existing large registry (.com). Authored EPP RFC's and contributions to other standards efforts. Authors of books on DNS, RFC's on nameserver practices and participation in industry wide efforts on security and architecture. 141 personnel includes .NET staffing. Use of IDE's, automated testing tools, change management systems.

2.5.2 General description of proposed facilities and systems

RFP Criteria: Describe all system locations. Identify the specific types of systems being used, their capacity and interoperability, general availability and level of security of technical environment. Describe in appropriate detail buildings, hardware, software systems, environmental equipment and Internet connectivity.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.i General description of proposed facilities and systems	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. System locations
2. Types of systems being used, their capacity and interoperability
3. Availability (availability characteristics of facilities and systems)
4. Security of technical environment
5. Buildings, hardware, software systems, environmental systems and Internet connectivity

General Observations

General description of proposed facilities and systems

All the vendors provided adequate information to support their plans.

1. System locations
 - All five vendors provided adequate information on primary, mirror and back-up sites.
2. Types of systems being used, their capacity and interoperability
 - All five vendors will deploy redundant, load balanced systems.
3. Availability (availability characteristics of facilities and systems)
 - All five vendors will deploy redundant, load balanced systems
4. Security of technical environment
 - All five vendors will deploy IDS, firewalls, limiters, and security procedures.
5. Buildings, hardware, software systems, environmental systems and Internet connectivity

All five vendors provided acceptable responses

Respondents Plusses and Minuses

Afilias:

Afilias provided adequate information on its proposed facilities and systems. It will deploy 2 IBM (US) and 1 Q9 (Toronto) data centers. Its access control is managed by IBM data centers. For internet connectivity, Afilias will use two separate ISPs.

CORE++:

CORE++ provided adequate information on its proposed facilities and systems. It will deploy primary, mirror and back-up in Germany and Korea. CORE++ will use Telefonica data centers.

Descriptions of some facilities (2.3.b.iii) were provided. No indication/discussion of minimal requirements for DNS sites was provided.

DENIC:

DENIC provided adequate information on its proposed facilities and systems. Information on the secondary SRS site was provided as feedback to the preliminary report.

Sentan:

Sentan provided adequate information on its proposed facilities and systems. Sentan will provide SRS in Virginia, North Carolina, Tokyo (Disaster), NS 24 on 6 continents. Minimal discussion of availability was provided. HVAC has N+1 redundancy (2.5.b.i.3.2). Redundant network connectivity was proposed (2.5.b.i).

VeriSign:

VeriSign provided adequate information on its proposed facilities and systems as feedback to the preliminary report.

2.5.3 Stability of resolution and performance capabilities

RFP Criteria: Describe the DNS' stability of resolution and performance capabilities, including: response times and packet loss targets; availability of authoritative name servers; processes, tools and automated monitoring to ensure accuracy of zone data for resolution; diversity of DNS infrastructure; diversity and redundancy of network and DNS infrastructure to handle bandwidth congestion and network failures of ISPs and host providers

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.ii stability of resolution and performance capabilities	Green	Red	Green	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. DNS response times
2. DNS packet loss targets

Based on the CNNP Test criteria

3. Availability of authoritative name servers
4. Accuracy of zone data for resolution
5. Diversity of DNS infrastructure
6. Diversity and redundancy of network and DNS infrastructure to handle bandwidth congestion and network failures of ISPs and host providers

General Observations

General observations and rankings are as follows:

CORE++ received “Red” in this category due to unsatisfactory measurement techniques in the DNS response times and packet loss targets. Afilias and DENIC provided satisfactory responses and received “Green”. Sentan is strong in the DNS diversity design. VeriSign is strong in the DNS response times and packet loss targets

1. DNS response times: CORE++ received “Red” rating based on failure to use the measurement methodology specified in .pro, .biz, and .info appendix D. Afilias, DENIC, and Sentan provided satisfactory responses (“Green”). VeriSign provided the best response times (100ms) and exceeds acceptable criteria.
2. DNS packet loss targets: CORE++ received “Red” rating based on failure to use the measurement methodology specified in .pro, .biz, and .info appendix D. Afilias and Sentan provided satisfactory responses (“Green”). DENIC and VeriSign provided the best loss target (1% averaged monthly) and exceeds acceptable criteria

3. Availability of authoritative name servers: Afilias and DENIC provided satisfactory responses (“Green”). CORE++ committed to provide 99.9999% availability while Sentan and VeriSign committed to provide 100% availability, exceeded acceptable criteria
4. Accuracy of zone data for resolution: All five vendors provided acceptable responses
5. Diversity of DNS infrastructure: CORE++ and VeriSign proposed satisfactory diversity (“Green”). Afilias, DENIC, and Sentan proposed plans which can sustain operations in the face of serious failures.
6. Diversity and redundancy of network and DNS infrastructure to handle bandwidth congestion and network failures of ISPs and host providers: Afilias, CORE++, DENIC, and VeriSign provided sufficient redundancy to accommodate common failures or overloads. Sentan stands out in this category. Its plan can survive multiple network failures and severe overload without degrading quality of service. The proposed plan exceeds acceptable criteria.

Respondents Plusses and Minuses

Afilias:

0: Afilias proposed DNS roundtrip response times to be less than 300 ms, DNS packet loss target to be less than 10%, and 99.999% of DNS uptime.

+: It plans to use automatic crawler to check consistency/accuracy on an ongoing basis, DBMS to maintain zone file, and DBMS tools to check updates for consistency.

+: Afilias will provide four master database instances in geographically diverse locations and provide backup databases for each master. Five DNS servers will be provided at each site, connected by 100 Megabit/sec links. The DNS infrastructure diversity design exceeded acceptable criteria.

-: Afilias proposed primary sites in separate NERC regions but not in separate power grids. No information was provided on whether the secondary servers have gigabit connectivity. Afilias did not address hardware and OS version diversity.

CORE++:

-: CORE++ received “Red” rating based on their failure to use the ICANN-specified measurement techniques. They were given the opportunity to revise their methodology, but did not.

-: Questions remain unanswered such as how many monitoring sites are to be used? How many servers will they monitor? How often? What constitutes failure?

DENIC:

+: In the response to the preliminary report, DENIC committed to resolution time of less than 200 ms based on ICANN's measurement methodology.

+: DENIC proposed stringent DNS packet loss targets (1% based on ICANN's measurement methodology). DENIC will maintain secondary master at geographically diverse location. It will also maintain multiple slave servers. Each nameserver consists of three different hardware and software implementations. The design exceeded acceptable criteria.

Sentan:

+: Sentan commits to 100% availability.

+: Sentan provides diverse hardware on 24 nameserver sites, some with peering, using BIND8 and BIND9 for software diversity.

+: ANYCAST technology is used for network diversity.

+: Sentan proposed OS/software and hardware diversity (2.5.b.ii.3.1 and 3.2).

+: Secondary sites will have 4 active servers (Exhibit 5.6.ii-1). Link speed 100 Megabits/sec (ibid).

-: Primary and secondary sites in same NERC region (2.5.b.i.3.1), but "disaster recovery" site on separate grid.

+: Its DNS availability and diversity designs (sub-criteria 3, 5, 6) exceeded acceptable criteria.

VeriSign:

+: VeriSign commits to resolution time of less than 100 ms for 95% of queries.

+: For DNS packet loss targets, it commits to less than 1% averaged monthly and no 5 minute period with over 5% of loss.

+: VeriSign commits to 100% of DNS availability.

+: VeriSign claims to have 14 sites served by multiple ISP's (not named) (2.5.b.ii.5.a).

+: VeriSign claims every site has gigabit speed network access (2.5.b.iii).

-: Diagram suggests multiple servers at each site, but number not given in text (2.5.b.ii).

-: Primary and alternate primary data centers are in same NERC region (2.5.b.i).

2.5.4 Operational scalability

RFP Criteria: Operational scalability sufficient to handle existing registry database and projected growth; DNS queries including peak periods and projected growth; DDoS attacks, viruses, worms and spam; and restart capabilities.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.iii Operational Scalability	Green	Green	Green	Green	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. **Operational scalability** to handle existent registry database and projected growth (Historical numbers are around 20%).
2. **Registrar Transaction Volume:** Describe mechanisms to handle 25% growth in transactions from any one Registrar on a month-to-month basis, and 20% growth in transactions from all Registrars on a month-to-month basis.
3. **DNS Queries:** Describe ability to handle annual projected 75% growth in DNS queries.
4. **DDoS Attacks, Viruses, Worms, Spam:** Describe network and system ability to tolerate cyber-attacks, and ability to detect/protect against these attacks.
5. **Restart Capabilities:** Describe the ability of the Registry to restart within 4 hours after an unplanned outage.

General Observations

VeriSign had the most top-ratings for their ability to handle registry database growth, DNS queries growth, and tolerate attacks such as DDoS and viruses.

Respondents Plusses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

+: DENIC provides good registry database and DNS query growth.

Sentan:

None.

VeriSign:

None.

2.5.5 Registry-registrar model/protocol and shared registration system

RFP Criteria: Describe the registry-registrar model and protocol; availability of a shared registration system, including processing times for standard queries (add, modify, delete); and duration of any planned or unplanned outages

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.iv registry-registrar model/protocol and shared registration system	Green	Green	Blue	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Registry-registrar model and protocol
 - Adequacy of supporting RRP and EPP Registry-registrar protocols
 - Support for “thick” registry model
2. Availability of shared registration system (SRS)
3. SRS Add, Modify, Delete processing time
4. Planned outages time per month
5. Unplanned outages time per month

General Observations

General observations and rankings are as follows:

All the vendors proposed satisfactory plans. DENIC, Sentan, and VeriSign stand out due to their stringent SRS availabilities. Overall, VeriSign proposed the best plan in this category

1. Registry-registrar model and protocol

All five vendors will support the EPP registry-registrar protocol. Afilias, CORE++, DENIC and Sentan will also support the thick registry model. All of the vendors will continue to support thin registry model and RRP registry-registrar protocol except that Sentan will migrate from thin registry-registrar model to thick registry-registrar model and CORE++ will only support RRP for one year after .net migration. All five vendors meet the criteria.

2. Availability of shared registration system (SRS)

Afilias and CORE++ proposed acceptable SRS availability. DENIC, Sentan, and VeriSign provided SRS availability which exceeds acceptable criteria. VeriSign proposed the most stringent SRS availability (99.99%).

3. SRS Add, Modify, Delete processing time

All five vendors proposed SRS processing times are better than the acceptable performance criteria. VeriSign proposed the most stringent SRS processing times (50ms for add, 100ms for modify, and 25 ms for check).

4. Planned outage time per month

All of the vendors provided acceptable responses. VeriSign proposed the shortest planned outage time (45 minutes per calendar month).

5. Unplanned outage time per month

All of the vendors provided acceptable responses.

Respondents Plusses and Minuses

Afilias:

+: Afilias will support the thick registry model and EPP protocol. Its SRS Add, Modify, Delete processing time performance objectives exceeded the acceptable criteria and met Blue threshold.

CORE++:

+: CORE++ will support both the thin and the thick registry model. The model can be chosen on a per-domain basis. This provides flexibility over all other vendors.

+: CORE++ SRS Add, Modify, Delete processing time performance objectives exceeded the acceptable criteria and met Blue threshold.

DENIC:

+: DENIC proposed stringent SRS availability (99.9%). It exceeded the acceptable criteria.

+: DENIC proposed stringent SRS processing performance objectives (The proposed processing time for Add, Modify, Delete domain is one second for 98% of all transactions. Add domain average is less than 300 ms. The Check domain average is less than 100ms.). They exceeded the acceptable criteria.

Sentan:

+: Sentan proposed the second most stringent SRS availability (99.95%). It exceeded the acceptable criteria.

+: Sentan proposed stringent SRS processing performance objectives (The proposed processing time for Add, Modify, Delete domain is one second for 95% of all transactions. The proposed Query domain processing time is 500 ms for 95% of all transactions.). They exceeded the acceptable criteria.

VeriSign:

+: VeriSign proposed the most stringent SRS availability (99.99%)

+: VeriSign proposed the most stringent SRS processing times (50ms for add, 100ms for modify, and 25 ms for check)

+: VeriSign proposed the shortest planned outages time (45 minutes per calendar month).

2.5.6 Database Capabilities

RFP Criteria: Database capabilities including database software, size, throughput, scalability, procedures for object creation, editing, and deletion, change notifications, registrar transfer procedures, grace period implementation , availability of system with respect to unplanned outage time, response time performance; ability to handle current volumes and expected growth and reporting capabilities.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.v Database Capabilities	Green	Green	Green	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Database software including vendor (if any) and version
2. Database sizing mechanism
3. Database throughput
4. Scalability including current sizing and ability to deal with current volumes and load
5. Definition of procedures for object creation, deletion, editing
6. Procedure for change notification
7. Registrar transfer procedure (Appendix C)
8. Grace period implementation (Appendix C)
9. Response time requirements (Appendix D &E)
10. Database availability (Appendix D)
11. Reporting capabilities

General Observations

Ranking are as follows:

1. Sentan significantly exceeds requirements in several categories. It is the only vendor with user customizable reports and they explicitly outline the ability to have mixed EPP/RRP protocols, short fail-over and adequate response times
2. VeriSign is ranked second. They exceed all in response time and throughput and are competitive in other sub-criteria.
3. CORE++, DENIC and Afilias are tied for third. They perform adequately in all categories

Respondents Plusses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

None.

Sentan:

+: Sentan is the only vendor with user customizable reports, explicitly outlines the ability to have mixed EPP/RRP protocols.

+: Sentan database performance capacity for 13,333 transaction per second (TPS)

VeriSign:

+: VeriSign .net database processes check transactions in less than 10 milliseconds and add transactions in less than 20 milliseconds, while processing transaction volumes that vary from 30 million to over 200 million per day

2.5.7 Geographic network coverage

RFP Criteria: Geographic network coverage, including physically diverse sites and support of growing and emerging markets

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.vi Geographic network coverage	Green	Green	Green	Blue	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Physically diverse sites
2. Support of growing and emerging markets

General Observations

All respondents had reasonable responses for diversity of sites and support for growing and emerging markets. Sentan stood out.

Respondents Pluses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

None.

Sentan:

- +: Good coverage in Africa, southern Asia
- +: Continually monitored and reevaluated, ensures that existing sites are measured against regional demand.
- +: Global reach strategy includes support for IPv6 backbone

VeriSign:

None.

2.5.8 Zone file generation

RFP Criteria: Zone file generation including procedures for changes, editing by registrars and updates. Address frequency, security, process, interface, user authentication, logging and data back-up

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.vii Zone file generation	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Security and access rights specification
2. Frequency of zone file creation
3. Procedure for changes, editing by registries and support for logging

General Observations

All respondents performed all tasks adequately.

Respondents Plusses and Minuses

None.

2.5.9 Zone file distribution and publication

RFP Criteria: Zone file distribution and publication. Locations of name servers, procedures for and means of distributing zone files to them.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.viii Zone file distribution and publication	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Locations of Name Servers
2. Procedures and means of distributing zone files to NS

General Observations

All respondents performed all tasks adequately. They described the methods for distribution of zone files and also the operational capability such as updates by registrars, security and back-up. They also described the methodology for verifying the correctness of the zone files so that errors were caught before distribution.

Respondents Plusses and Minuses

None.

2.5.10 Billing and collection systems

RFP Criteria: Billing and collection systems. Technical characteristics, system security, accessibility.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.ix Billing and Collection systems	Green	Green	Green	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Payment arrangement from registry to ICANN
2. Payment Agreement from registrar to registry
3. Operational capability
4. Appendix F

General Observations

All respondents had adequate procedures for billing and payments arrangements. They all had reasonable architectures and solutions.

Respondents Plusses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

None.

Sentan:

+: Sentan has given a good description with implementation details and actual experience. Sentan gives a detailed description of the architecture, implementation and operational capability of their billing system which allows them to provide reliable service. Billing security is at the same level as the core registry database while providing ease of access to registrars.

VeriSign:

+: VeriSign has shown actual bills and invoices. Aside from the basic payment mechanisms, VeriSign provides 24x7 access to the billing systems to registrars with multi-tiered security to set permissions and modify account parameters. They have existing system and have shown actual bills and invoices.

2.5.11 Backup.

RFP Criteria: Describe frequency and procedures for backup of data. Describe hardware and systems used, data format, identity of suggested escrow agent(s) and procedures for retrieval of data/rebuild of database

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.x Backup	Blue	Blue	Green	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Frequency
2. Procedure
3. Hardware, Systems and Data Format
4. Escrow agent
5. Policies for retrieval of archives and rebuild of database

General Observations

All respondents had adequate back-up and recovery procedures and everyone did more than the base requirements. Everyone, except DENIC uses Iron Mountain, a leading vendor for archival and retrieval. Everyone, except DENIC had mechanisms for different granularity of failures.

Respondents Plusses and Minuses

Afilias:

- + : Uses Iron Mountain, a leading vendor for archival and retrieval.
- + : Exceptional procedures and policies for database retrieval.

CORE++:

- + : Uses Iron Mountain, a leading vendor for archival and retrieval.
- + : Exceptional procedures and policies for database retrieval.

DENIC:

None.

Sentan:

- + : Uses Iron Mountain, a leading vendor for archival and retrieval.
- + : Exceptional procedures and policies for database retrieval.

VeriSign:

- + : Uses Iron Mountain, a leading vendor for archival and retrieval.
- + : Exceptional procedures and policies for database retrieval.

2.5.12 Escrow

RFP Criteria: Describe arrangements for data escrow, or equivalent data backup security, data formats, insurance arrangements and backup plans for data recovery

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.xi Escrow	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

1. Describe arrangement for data escrow or equivalent data back-up security
2. Data Formats
3. Insurance Arrangements
4. Plans for recovery

General Observations

All respondents are tied. They all perform tasks adequately in these criteria

Respondents Plusses and Minuses

None.

2.5.13 Publicly Accessible WHOIS Service

RFP Criteria: Publicly accessible WHOIS service. Address software and hardware, connection speed, search capabilities and coordination with other WHOIS systems. Frequency of WHOIS updates, availability and processing times. Identify whether you propose to use a “thick” registry model or “thin” registry model, and explain why you believe your choice is preferable.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
--	-----------------	--------	--------------	-----------------	----------------

2.5.b.xii Publicly Accessible WHOIS Service	Green	Green	Blue	Blue	Green
--	--------------	--------------	-------------	-------------	--------------

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Explanation of software, hardware, connection speeds.
- Explanation of availability and processing times
- Explanation of thick/thin justification.
- Degree of search capabilities, support for basic to advanced queries.
- Degree of coordination with other WHOIS systems.
- Meets or exceeds standards in appendices O, P, Q.

General Observations

Afilias, CORE++, DENIC and Sentan describe near real-time updates of the WHOIS service. Sentan describes detailed searching capabilities. DENIC, Sentan and VeriSign describe sophisticated environments and capabilities.

Respondents Plusses and Minuses

Afilias:

- +: SRS, Web and WHOIS distributed across 6 machines with instances of all on each.
- +: Commercial DB. Design of thick model described.
- +: High-performance system since their reported experience with .INFO and .ORG (< 100ms) is far better than the requirement of 800ms, and appears to be improving.
- +: Provision for automatic rate limiting for heavy or malicious users.

CORE++:

- +: Continuous updates and syncing to other servers.

DENIC:

- +: WHOIS availability of 99.99%, New WHOIS servers can be added at any time.
- +: Firmly believes the thick model to be superior to the thin model.
- +: Two step WHOIS procedure significantly reduces load on database. Status queries are answered in less than 100 milliseconds for more than 98% of all queries. These status queries represent about 85% of all WHOIS queries.

+: Domain queries are answered in less than 300 milliseconds. Commitment to work on WHOIS successor CRISP/IRIS.

+: Privacy flags to enable registrants to individually decide to which degree contact data will be made available. Query flags to choose character set, syntax for WHOIS requests with flags. Integration into the replication system ensures WHOIS data is availability in near real time with an average latency of few milliseconds and a maximum latency of one minute.

Sentan:

+: SW, HW, Connection speed, Choice of Thick model, availability, all well defined.

+: History of near real-time dynamic updates and no outages.

+: Accommodate thin, thick, or modified thick models.

+: Optimized for speed using an in-memory database. Architecture developed to exceed NeuLevel's current .BIZ SLA of 95% of all queries responded to in less than 1.5 seconds.

+: Built-in support for IDN. Onscreen keyboard to assist users in typing Unicode characters. Translation of WHOIS website into 9 languages. Unicode to Punycode and Punycode to Unicode translator.

+: Strong proponent of the thick model, detailed multi-point explanation of pros and cons. Commit to deploy IRIS. Near real time updates.

VeriSign:

+: High performance design.

+: WHOIS software is written by VeriSign and is fully compliant with RFC 3912.

+: 100 percent WHOIS availability

+: WHOIS response time is less than 5 milliseconds for 95 percent for all WHOIS queries.

+: Capacity of 2.6 billion queries per day, have seen query traffic as high as 60 million queries in a single day.

+: Database servers use five servers, in-memory database technology.

-: Frequency of updates is 2/day with commitment to increase to near-real-time. Has experience performing near real-time updates in the .name WHOIS service.

2.5.14 System Security and Physical Security

RFP Criteria: 2.5.b.xiii: System security and physical security. Technical and physical capabilities and procedures to prevent system hacks, break-ins, data tampering and other disruptions to operations.

The evaluation details for this RFP Criteria are outlined in section RFP Criteria 2.6.c: Security Environment

2.5.15 Peak capacities

RFP Criteria: Technical capability for handling a larger-than-projected demand for registration or load. Effects on load on servers, databases, back-up systems, support systems, escrow systems, maintenance and personnel.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.xiv Peak capacities	Green	Blue	Blue	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Define peak capacities for .NET registrations, transactions, and DNS queries.
- Describe ability of system to handle peak capacities. (peak capacities should be significantly more than those described in 2.5.b.iii (Operational Scalability)).

General Observations

All but one respondent did a very good job of describing their ability to handle peak capacities significantly more than required. Apart from providing quantitative estimates of peak capacity, they also provided details of mechanisms for handling the estimated peak capacity.

Afilias provided definitions of anticipated demand. But their approach for handling peak capacities seemed to involve proactive monitoring of systems to maintain their average load below specific levels. Details of peak capacity of their system were not clearly provided.

Respondents Plusses and Minuses

None.

2.5.16 System reliability

RFP Criteria: Define, analyze and quantify quality of service.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.

2.5.b.xv System reliability	Green	Green	Green	Green	Green
------------------------------------	--------------	--------------	--------------	--------------	--------------

General Observations

All respondents did a good job of clearly defining specific reliability metrics, software processes, and testing tools that are used to verify reliability metrics.

Respondents Plusses and Minuses

None.

2.5.17 System Outage Prevention

RFP Criteria: 2.5.b.xvi: System outage prevention. Procedures for problem detection, redundancy of all systems, backup power supply, facility security and technical security. Outline the availability of backup software, operating system and hardware. Outline system monitoring, technical maintenance staff and server locations

The evaluation details for this RFP Criteria are outlined in section RFP Criteria 2.5.b.xviii: System Recovery Procedure.

2.5.18 Support for IDNs, IPv6, DNSSEC

RFP Criteria: Ability to support current feature functionality of .NET (to the extent publicly or otherwise available to the vendor), including IDNs, support of IPv6, DNSSEC.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.xvii Support for IDNs, IPv6, DNSSEC	Green	Blue	Blue	Green	Blue

General Observations

VeriSign supports all three features, i.e. IDN, IPv6, and DNSSEC. IDNs are supported by all the respondents. DENIC supports DNSSEC conceptually, but does not seem to have conducted trials in a production setting to gain experience. It does not have plans to setup a DNSSEC test-bed either.

Respondents Plusses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

None.

Sentan:

+Significant R&D investment in DNSSEC. Staff member one of originators for DNSSEC requirements. Trials underway.

VeriSign:

+: Supports IPv6 today, and making significant investments in DNSSEC.

2.5.19 System Recovery Procedure

RFP Criteria: 2.5.b.xviii: System recovery procedures: Procedures for restoring the system to operation in the event of a system outage, both expected and unexpected. Identify redundant/diverse systems for providing service in the event of an outage and describe the process for recovery from various types of failures. Describe the training of technical staff that will perform these tasks, the availability and backup of software and operating systems needed to restore the system to backup electrical power systems and the projected time for system restoration. Describe procedures for testing the process of restoring the system to operation in the event of an outage, the documentation kept on system outages and on potential system problems that could result in outages.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
--	------------------------	---------------	---------------------	------------------------	-----------------------

2.5.b.xvi and 2.5.b.xviii Outage Prevention and Recovery	Blue	Blue	Blue	Blue	Blue
---	-------------	-------------	-------------	-------------	-------------

Evaluation Criteria

Given the close relationship between “System Outage Prevention” (2.5.b.xvi) and “System Recovery Procedures” (2.5.b.xviii), there is significant overlap between the sub-criteria used to evaluate both sections. The responses were evaluated against the following sub-criteria.

- System monitoring and proactive problem detection
- System redundancy approach
- Technical staff selection and training
- Geographic diversity of server sites
- System-restoration procedures
- Approach for testing system-restoration procedures
- Documentation on potential and actual system outages

General Observations

All vendors exceeded the evaluation criteria by providing details on how they would prevent outages whenever possible and recover from outages when they occur. All vendors have described a prevention/recovery plan that we believe would meet or improve upon the allowable system outage times described in Appendix D of the current .Pro registry agreement.

Respondents’ Pluses and Minuses

Afilias:

+: Proven track record dealing with outages. Afilias successfully used its approach during the US power outages in 2003.

CORE++:

-: CORE++ describes what they *will* do, rather than what they have *already* done which is moderately risky.

DENIC:

+: DENIC has never needed to use its backup power system due to the high reliability of the power grid in Frankfurt.

-: Primary and secondary SRS sites located 275 miles apart.

Sentan:

-: Sentan/NeuLevel addressed our concern regarding having a primary and backup SRS within 400 miles of each other, and a third site in Japan which can be activated in 24 hours. Nevertheless, we still believe that the greater geographic distribution of some of the other vendors is better than the Sentan/NeuLevel approach.

VeriSign:

+: VeriSign has operated a highly available service for some years.

2.5.20 Technical and Other Support

RFP Criteria: Technical and other support. Support for registrars and for Internet users and registrants. Describe technical help systems, personnel accessibility, web-based, telephone and other support services to be offered, time availability of support and language-availability of support. Ability to support new and emerging technologies.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.5.b.xix Technical and Other Support	Green	Green	Green	Blue	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Description of technical help systems including web-based, telephone and other support services
- Time availability, personnel accessibility and language availability
- Support for new and emerging technologies

General Observations

Sentan describes a significant help organization and its participation in support of emerging technologies and is in first place. VeriSign also provides significant help support and is in second place. Afilias and DENIC meet the basic requirements and are tied for third. CORE provided minimal details on how they will support registrants and Internet users, and is in fifth place.

Respondents Plusses and Minuses

Afilias:

-: Currently both customer and technical support are provided to registrars in English only.

+: Selected a partner to provide technical and customer support in the following languages: English, Chinese (Cantonese and Mandarin), French, German, Hindi, Italian, Japanese, Korean, Russian and Spanish.

+: Planned outages and maintenance announced at least seven days prior to the scheduled date.

+: When new and emerging technologies are launched, Afiliis disseminates communications to Customer and Technical Support Group to allow them to assist registrars.

+: Before a registrar is allowed to join the live Shared Registry System it must first pass Operational Test and Evaluation (OT&E) certification to verify the correct operation of a registrar's client system. Provides a Registrar Tool Kit.

CORE++:

-: Minimal description of help procedures, especially for registrants and Internet users.

+: Three shifts provide 24 x 7 x 365 coverage. Three support centers at three different locations. Languages available are Portuguese and Spanish, Korean, Chinese and Japanese.

+: Will establish an operational test-and-evaluation facility that will be available 24 x 7 x 365 for registrars to test their client system.

+: Major SRS upgrades are installed on the OT+E system before being deployed on the production system.

DENIC:

+: Good language coverage in the registry website (Arabic, Chinese, English, French, German, Spanish).

+: 365 x 24 x7 support in English, 14 hr/day German, several callback languages available.

+: Test environment available free to registrars, provides a registrar toolkit. Regularly organizes events with a focus on information exchange: Technical Registrar Meetings, Registrar Advisory Councils.

Sentan:

+: Very detailed and well-thought-out support infrastructure. 3-tier support with all tiers available 365/24/7.

+: Extensive accommodation for multiple languages including CSRs, web. WHOIS and web content in multiple languages, live chat and telephone translation service with 100 language support.

+: Web portal for registrars including registrar administration tool, ad hoc reporting, automated registry-registrar messaging, etc. with access controlled via hardware SecurID and encryption of data traffic.

+: Direct support in call centers for Chinese, French, German, Italian, Japanese, Korean, and Spanish. Convincing outline of support for steering registrants to the proper help entity. Extensive description of support of new technologies.

VeriSign:

+: 365x24x7 availability, support offices around the world, multiple languages spoken by support staff (including Farsi) and available on websites and portal.

+: Language service for translation of less common languages.

+: EPP and IDN software development kits available.

+: Red Herring top 100 Innovator award for development of ATLAS.

+: Active participation in industry events and workshops, conducts seminars and webinars.

2.6 Security and Stability

RFP Criteria: *The entity chosen to operate the .NET registry must: (i) maintain .NET registry functions efficiently and reliably, (ii) demonstrate disaster recovery capability and (iii) deliver high quality of service for all .NET users worldwide. Providing documentation for procedures insuring a very high level of security and stability is an absolute criterion.*

All vendors met the absolute criterion of “providing documentation for procedures insuring a very high level of security and stability,” and received green rankings. The sections below discuss the relative criteria.

2.6.1 Provision for Registry Failure

RFP Criteria: Describe in detail how you would assure continuity of operations in the event of operational failure of the registry and make provision for contingencies and a failsafe back-up plan. A commitment to provide ICANN with escrowed data, in and of itself, will not satisfy the absolute criterion.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
--	------------------------	---------------	---------------------	------------------------	-----------------------

2.6.a Provision for Registry Failure	Blue	Green	Green	Green	Blue
--------------------------------------	------	-------	-------	-------	------

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Overall disaster-recovery approach
- Approach to escrowing registry data
- Approach for ensuring continuity of operations in the event of a major operational failure
- Management approach to disaster recovery
- Technical approach to disaster recovery

General Observations

All vendors met or exceeded the evaluation criteria by providing details on how they would deal with the technical failure of their registry. (Business failures were addressed in Section 2.6.b and security issues were addressed in 2.6.c). Responses to this section are related to information provided in many 2.5.b subsections. Some vendors provided significantly more detail than others, however, allowing some differentiation of the scores.

Respondents' Pluses and Minuses

Afilias:

+: Superior approach to managing registry failure.

CORE++:

-: Limited detail provided.

DENIC:

-: Approach to geographic diversity slightly risky due to proximity of primary and backup sites.

Sentan:

-: Approach to geographic diversity slightly risky due to proximity of primary and backup sites.

VeriSign:

+: Comprehensively describes the processes for recovery from various registry failures.

2.6.2 Provision for Business Failure

RFP Criteria: Provision for Business Failure. Describe in detail what advance arrangements you will implement to ensure that, if your operation of the .NET registry becomes financially non-viable, the registry operations will be quickly, smoothly and efficiently transferred to another operator so as to minimize disruption of the registry functions.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.6.b Provision for Registry Failure	Green	Green	Green	Green	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Cash reserves and other financial contingencies
- Transition planning in the event of business failure
- Approach for code and data to facilitate transition in the event of business failure
- Management approach to transition in the event of business failure
- Technical approach to transition in the event of business failure

General Observations

All vendors provided sufficient information to demonstrate a viable approach to transitioning their registry operation in the event of a business failure.

Respondents' Pluses and Minuses

Afilias:

None.

CORE++:

None.

DENIC:

None.

Sentan:

None.

VeriSign:

- + VeriSign financial status. Details are proprietary and are available to ICANN.
- + VeriSign is the only vendor who has already transitioned a registry that it previously operated to a different registry operator (i.e., the .org transition).
- + VeriSign noted in its response to the preliminary report that as a publicly traded company, its "financial systems are designed to meet the rigorous requirements and disclosure policies required by the United States Securities and Exchange Commission as well as other applicable laws, specifically the Sarbanes-Oxley requirements." The evaluators note that meeting Sarbanes-Oxley requirements necessitate a higher level of standard in the area of access controls and security measures for financial applications.

2.6.3 Security

RFP Criteria 2.6.c: Describe in detail your arrangements to provide a secure environment in which the registry infrastructure is to be operated.

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.6.c and 2.5.b.xiii Security	Green	Green	Green	Green	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Risk Management
- Security Controls
- Systems Development Lifecycle
- Certification and Accreditation
- System Security Plan
- Personnel Security
- Physical Protection
- Help-Desk
- Hardware and Software Maintenance
- Data Integrity
- Documentation
- Awareness, Training and Education
- Incident Response
- Identification and Authentication

- Logical Access Controls
- Audit Trails
- Intrusion Detection Systems
- SSLv3 Support

General Observations

None.

Respondents' Pluses and Minuses

Afilias:

+: Top rating for 5 sub-criteria.

CORE++:

+: Top rating for 4 sub-criteria.

-: Poor rating on one criterion, even after response to the preliminary evaluation report.

DENIC:

+: Top rating for 5 sub-criteria.

Sentan:

+: Top rating for 8 of 18 sub-criteria.

VeriSign:

+: Top rating for 13 of 18 sub-criteria.

+: Original RFP response did not need to be augmented with additional information in response to the preliminary evaluation report.

2.7 Additional Relative Criteria

RFP Criteria: The following are additional relative criteria: (i) the degree to which the vendor's proposal promotes competition in the registration of domain names, (ii) the degree to which an vendor's business model relies on multiple, rather than sole source, suppliers, to reduce the impact of failure by any one supplier, and (iii) the degree to which an vendor's proposal results in improved implementation of, and support for, GNSO policies, such as transfers and deletes

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.7. Additional Relative Criteria	Green	Green	Green	Green	Green

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

(i) the degree to which the vendor’s proposal promotes competition in the registration of domain names,

- Equitable / open access is provided to the registrars
- Ease of market entry for registrars (breadth and depth of technical, marketing and/or business support provided to new registrars)
- Ease of use for registrar, for example, user friendly order systems
- Breadth and depth of service and help desk support
- National or regional distribution enhancements, for example, local language support
- R&D – for example, innovations and developments in enhancements to DNS to facilitate growth
- Meeting previously unmet needs of the registrars or consumers
- Ease of domain name portability across registrars
- Technology transfer

(ii) degree to which an vendor’s business model relies on multiple, rather than sole source, suppliers, to reduce the impact of failure by any one supplier,

- Who are the vendor’s suppliers:
 - Equipment
 - People
 - Services
 - Outsourced?
 - Availability of personnel
- What, if any, risk mitigation strategies have been developed to deal with the above?
- Are supply risks captured in the vendor’s business continuity plans and or risk mitigation strategies
- See vendor’s response to item 6, Security and Stability, “(a) Provision for Registry Failure. Describe in detail how you would assure continuity of operations”

(iii) the degree to which an vendor’s proposal results in improved implementation of, and support for, GNSO policies, such as transfers and deletes

- What is the vendor’s response to RFP Part 2, Item 1, “ICANN Policy Compliance” in which the respondent describes in detail its method for implementing ICANN’s Inter-Registrar Transfer Policy.
- What is the vendor’s response to RFP Part 2, Item 1, “ICANN Policy Compliance” in which the respondent describes how it will comply with ICANN’s consensus policies?

- Review vendors comments in support GNSO Policies, as defined on the page <http://gnso.icann.org/policies/> , specifically;
 - **Issues Reports (Dispute Resolution and Privacy)**
 - [Staff Manager's Issues Report on UDRP Review](#)
 - [Staff Manager's Report on Privacy Issues Related to WHOIS](#)
 - **Consensus Policies**
 - [Transfers](#) (Approved by ICANN Board 25 April 2003)
 - [WHOIS](#) (Approved by ICANN Board 27 March 2003)
 - [Deletes](#) (Approved by GNSO Council on 24 June 2003)
 - **Implementations of New Consensus Policies**
 - [WHOIS Data Reminder Policy \(WDRP\)](#) (Notice given to registrars 16 June 2003)

General Observations

General observations and rankings are as follows:

For 2.7 all vendors provided satisfactory responses. Some distinguishing points are noted below.

- (i) the degree to which the vendor's proposal promotes competition in the registration of domain names,

All of the respondents provided satisfactory responses. Sentan and VeriSign's responses, however, stand out above the other three in that they provided more detail in how each one has specifically promoted competition than the other respondents in this area.
- (ii) degree to which an vendor's business model relies on multiple, rather than sole source, suppliers, to reduce the impact of failure by any one supplier

All of the respondents provided satisfactory responses
- (iii) the degree to which an vendor's proposal results in improved implementation of, and support for, GNSO policies, such as transfers and deletes.

All of the respondents provided satisfactory responses

Respondents Plusses and Minuses

Afilias:

+: Afilias provided additional information in response to the preliminary report regarding language support and translation services, 24x7x365 technical and customer support in 10 ten languages via phone, e-mail, postal service and fax, and will also make the FAQs and customer training material available in said languages.

+: Afilias will fund a \$1M Infrastructure Innovation Fund, to be directed by their Technical Advisory Group, although it is not clear how this level of funding for the Infrastructure Innovation Fund would be supported.

-: Afilias's response did not demonstrate regional development and support to the same degree as respondents VeriSign and Sentan.

CORE++:

+: CORE++'s use of partners with established operations in different regions, such as Asia/Pacific SRS Location and Support Office (Subcontractor: NIDA Consortium), European SRS Location, and EMEA Support office (Subcontractor: CORE), Americas Support Office (Subcontractor NICBR). However, NICBR is based out of Brazil, raising possible question regarding North American support.

-: CORE++, the bid vehicle, has no employees on its own. CORE++ SL is the future entity that would become the registry operator. CORE++ is a company which consists of ccTLD registries and the consortium of registrars (CORE). The principle behind CORE++ is "to do the work by the members of the company whenever feasible: decentralization and coordination." CORE++ identifies geographically focused "functional units" that will have staff "devoted to .NET".

This decentralized nature *could* be a plus if there is strong coordination, but given CORE++ is a new entity and has no employees, we are concerned that without a strong central organization such decentralization could lead to uncoordinated, if not conflicting, business support efforts.

DENIC:

+: DENIC has a demonstrated history of a successful ccTLD promotion, with more than 8,000,000 domains in .de.

+: DENIC has a successful cooperative structure, with about 225 registrars from twelve countries. Due to DENIC's organizational structure as a cooperative, each of its 225 registrars is a DENIC member. Each of them is given the same voice in DENIC's decision making process. DENIC adds "changes in existing services and implementation of new services therefore only get accomplished if the majority of registrars are sure of a need for them" and that "the experiences DENIC has gained from this very tight connection to all registrars concerned, it will apply for the administration of .net." This is a valuable feedback mechanism for business support.

-: DENIC's response did not demonstrate regional development and support to the same degree as respondents VeriSign and Sentan.

-: DENIC's response does not state how it will provide business support to Asia.

-: In response to the preliminary report, DENIC added that DENIC and Tucows have "signed a very detailed Letter of Intent (LoI) on February 2, 2005. DENIC will provide worldwide support services from its headquarters location in Frankfurt 14 hours a day - from 5 to 19 UTC - seven days a week, with Tucows offering services from 16 to 7 UTC, five hours of overlap service will be available. Tucows will also provide organizational support for registrar trainings in North America.

Note that this Letter of Intent was signed after the RFP submittal due date.

Sentan:

+: Sentan describes an explicit market outreach program to stimulate the introduction of new registrars. Business plan includes details on funding to expand marketing materials and registry communications into 11 major languages in addition to English. Marketing and business support for registrars is detailed, for example, Sentan proposed 7 new services in Sections 3.a and 4.b.iv.1 that would support registry and registrar industry growth.

+: JPRS and NeuLevel partnership would provide business support for growth areas in Asia.

+: Sentan states it will implement a comprehensive program of outreach and education to stimulate the introduction of new registrar competitors. Particular focus will be placed on markets with a very low concentration of existing .NET registrars, notably Latin America, Africa, Middle East, and parts of Asia. However, the response lacks specific details on how such a program would be instituted.

VeriSign:

+: VeriSign's response to section 2.7.i describes several areas of demonstrated market support for registrars in new regions, note in particular VeriSign's success in recruiting new registrars in new regions, for example 1) recruiting 120+ new registrars in regions such as China, South Korea, and Brazil. VeriSign provides additional details in Section 3, "Network Expansion to Underserved Regions".

+: VeriSign provides registrars with objective market research to support their business needs. The existence of such marketing support programs was verified via a check of VeriSign's web site.

+: VeriSign establishes registrar financial requirements during the new registrar setup process.

+: VeriSign conducts periodic statistic analysis of gaps in registrations to identify underserved regions.

+: "Ease of use is supported for registrars, for example, user friendly order systems." VeriSign states "ATLAS (for Advanced Transaction Lookup and Signaling System) was named as one of the year's best innovations by InfoWorld and cited by ICANN Chairman Vint Cerf as an example of innovation in the ICANN-sponsored evaluation of new gTLDs." (The above statements regarding the InfoWorld citation, VeriSign's availability statistic, and Vint Cerf's comments were provided by VeriSign, and have not been independently verified.)

2.8 Transition or Migration Plan

RFP Criteria: Vendors should document their plan for (i) migrating .NET from the current registry operator (if applicable) with specific attention paid to maintaining existing functional capabilities as defined at the time of the RFP, including the existing RRP and (ii) for implementing support for Version 1.0 of EPP

Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
2.8. Transition or Migration Plan (relative)	Blue	Green	Green	Blue	Blue

Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- Steps of the proposed transition, including sequencing and scheduling.
- The duration and extent of any interruption of any part of the Registry Function.
- If a thick registry model is intended, the steps for moving from the current thin registry model to a thick registry model.
- Contingency plans in the event any part of the proposed transition does not proceed as planned.
- The effect of the transition on (a) .NET registrants and registrars, (b) Internet users seeking to resolve .NET domain names, (c) performance of registration system, if any, and (d) performance of resolution system.
- The specifics of cooperation required from VeriSign, Inc.
- Any relevant experience of the vendor and the contracted service parties in performing similar transitions.
- Any proposed criteria for the evaluation of the success of the transition.
- Supporting RRP at time of transition and a migration path for EPP. Sub-categories for this area were as follows
- A detailed description of the plan for supporting RRP at the time of transition, for supporting EPP 1.0, and for providing registrars with a smooth, low-cost migration path from RRP to EPP.
- Provision for enabling testing of the EPP protocol between the registrar and registry before being deployed in a live production network?
- Migration plan provides for continual operations following the initial transition period
- Time frame for providing support for EPP
- Period for both protocols to be supported concurrently

- When a “Thick” Registry is used, is EPP the protocol deployed?

General Observations

All the vendors had reasonable and workable solutions for the migration and all had experience in migration. However, Sentan and Afiliias had both experience in the domain name space of the same size and complexity as would be required in a .Net migration. Sentan’s incentive-based approach to accelerate transition to EPP was quite innovative.

For migration to EPP, all the vendors significantly exceeded requirements for EPP support and all had mechanisms for concurrent EPP support.

Respondents Plusses and Minuses

Afiliias:

+: Afiliias has successfully performed several transitions, some of which were of similar scale and complexity to what the .Net migration would be.

CORE++:

+: exceeds requirements for concurrent EPP support

DENIC:

+: exceeds requirements for concurrent EPP support

Sentan:

+: Sentan has significant experience in transitioning a TLD (.US) from VeriSign. Sentan has also done transitions associated with managing telephone numbers in North America

+: For concurrent support for EPP Sentan describes a unique incentive-based approach to accelerate the transition to EPP. They also have a sensible approach to testing EPP

VeriSign:

+: VeriSign has zero transition risk.

3. Applicant Ranking

As stated in the executive summary the evaluators find that each of the applicants has the capability to run the .NET registry. The distinguishing characteristics are largely differences in experience, risk, and price. We would caution that the final rankings are not, by their very nature, high precision.

3.1 Ranking at a glance

	Afilias Limited	CORE++	DENIC Domain	Sentan Registry	VeriSign, Inc.
Applicant Ranking (overall)	4	5	3	2	1
High priority criteria	4 Blue	4 Blue 1 Red	5 Blue	11 Blue	14 Blue
Medium priority criteria	-	1 Blue	-	1 Blue	-
Pricing rank (medium priority)	1	4	5	2	2
Lower priority criteria	-	-	-	-	-

3.2 Evaluation Criteria

The responses were evaluated against the following sub-criteria.

- High Priority Criteria - those criteria which reflect the need to preserve the stability and security of the Internet systems, including:
 - Technical Competence
 - Registry Operations
- Medium Priority Criteria - those criteria which reflect core ICANN principles, such as promoting and sustaining competition
 - Equivalent Access for Registrars
 - Revenue and Pricing Model; Financial Strength and Stability
 - Additional Relative Criteria: the degree to which the applicant's proposal promotes competition in the registration of domain names
- Lower Priority Criteria - those criteria which reflect other ICANN principles

The following are additional relative criteria:

- The degree to which an applicant's business model relies on multiple, rather than sole source, suppliers, to reduce the impact of failure by any one supplier and,

- The degree to which an applicant's proposal results in improved implementation of, and support for, GNSO policies, such as transfers and deletes.

3.3 General Observations

The high priority criteria correspond to RFP sections 2.3, 2.5, 2.6 and 2.8. On these sections VeriSign received 14 blue marks and Sentan received 12 blue marks. Afilias received 3 blue marks. DENIC received 4 blue marks. CORE++ received 3 blues and one red.

The medium priority criteria correspond to relative portions of RFP sections 2.2, 2.4, and portions of 2.7. For 2.2 CORE++ and Sentan had blue scores. 2.4 resulted in Afilias having the best price, Sentan and VeriSign tying for second, and CORE++ and DENIC being fourth and fifth in the ordering, respectively. VeriSign received all green scores on the medium priority criteria.

The lower priority criteria correspond to portions of RFP sections 2.2 and 2.7. We did not find significant differences among the vendors in these sections.

While the site visits were used to verify the applicants' responses and not used to rank the applicants, we found that the site visits were not in conflict with overall ranking. Sentan and VeriSign are both mature organizations with comprehensive quality processes. While there is the obvious benefit of no transition risk associated with awarding .NET to VeriSign, we note that Sentan has produced very detailed planning documents for the .NET transition and has ordered or installed the network access and computing hardware needed to support the .NET registry. Thus, we believe that this validates the Sentan RFP score and that there would be low risk associated with awarding .NET to Sentan.

Under the criteria of the RFP, although VeriSign received a higher ranking we do not find the differences between Sentan (12 high priority blue and 1 medium priority blue) and VeriSign (14 high priority blue) to be statistically significant.

3.4 Respondents Plusses and Minuses

Afilias

+ Afilias has transitioned the .ORG domain and has a strong understanding of the process of transitioning the .NET domain.

CORE++

- The CORE++ business entity does not yet exist. As a result, the risk associated with CORE++ is much higher than with other applicants.

+ CORE++ proposes to support thick or thin registry models on a per domain name basis, providing flexibility to the Registrars.

DENIC

- At the time of the original RFP DENIC had not selected the site for the secondary SRS location. Although the feedback to the preliminary scoring indicates that they have selected Amsterdam, this may indicate a slightly lower level of maturity for their application

Sentan

None.

VeriSign

+ VeriSign has experience offering registry services at a scale much larger than .NET.

+ VeriSign proposed the most stringent SRS availability numbers of any of the vendors as well as the best SRS processing times. However, it is unclear whether the differences are truly significant.