

**The IDN Variant Issues Project:  
Proposed Project Plan for Next Steps  
20 February 2012**

**Background:**

On 20 April 2011, ICANN announced the [IDN Variant Issues Project](#) to explore the benefits and risks associated with the potential inclusion of IDN variant TLDs in the DNS root zone. This project was initiated by the [ICANN Board of Directors](#) in 2010.

Phase I involved the formation of six case study teams for the Arabic, Chinese, Cyrillic, Devanagari, Greek and Latin scripts. These teams were comprised of community experts with support from ICANN that worked on identifying issues related to IDN variant TLDs for each particular script, resulting in the publication in October 2011 of six individual reports detailing their findings.

Phase II focused on integrating those six case study reports into the Integrated Issues Report. To complete this phase, ICANN formed a coordination team comprised of experts from each of the case study teams. The coordination team advised ICANN on completing the Integrated Issues Report, which summarizes and categorizes the various issues related to the identification and management of IDN variant TLDs.

On 23 December 2011, ICANN published for [public comment](#) the [draft Integrated Issues Report](#). Following the public comment period, ICANN published a [Summary and Analysis](#) of [comments](#) received and considered this input in producing the [final Integrated Issues Report](#).

**Next Steps:**

The next steps outlined in this project plan follow the recommendations presented in section 7 of the final Integrated Issues Report. The plan involves performing feasibility studies on certain types of variants and developing tools, processes, and protocols to support specific solutions, in cooperation with the appropriate experts. For the purpose of arriving at a determination in principle on what types of variant TLDs could be potentially implemented, it is expected that the required work can be completed by the end of 2012. However, no variant TLDs can actually be delegated until the necessary community work on the code point repertoire and label generation process for the root has been sufficiently well developed.

The plan describes several discrete projects to be completed, along with estimated resources needed to complete them. The plan will use resources already dedicated to the IDN Variant Issues Project to cover the costs associated with projects scheduled to start in the current fiscal year (FY2012). While the ICANN budget framework for next fiscal year envisions funding for all of these projects, ICANN will also seek partners in the community that may be willing to contribute resources toward completing the work.

The final Integrated Issues Report and the proposed project plan will be discussed at the ICANN public meeting to be held in Costa Rica in March 2012, to determine whether and how ICANN should proceed with regard to additional work on variant TLDs.

## **Proposed Project Plan**

### **1. Developing a Label Generation Ruleset Tool**

#### **Project 1: Label Generation Ruleset Tool**

**Description:** Develop a standard tool specification for listing allowed code points and their corresponding variants, if any.

**Rationale:** Based on discussions during the development of the Integrated Issues Report, it became apparent there is a need to use a tool to machine-generate sets of variants in accordance with formal label generation rules. Currently, different registries use different formats for describing their variant tables.

The community would benefit from the standardization of a table format that would allow software implementers to easily and predictably generate variants. Such a table format should be developed with input from potential implementers and other interested parties, possibly through a technical standards body such as the IETF. In conjunction with this work, ICANN could facilitate a reference implementation of software that demonstrates how the table format could be utilized. Such work could be used internally within ICANN for its processes when handling variants for the root zone, if any.

It should be noted that this project is independent of the decision of implementing any type of variant in the root. The LGR tool is expected to be useful for any registry implementing variants at any level in the DNS tree, and therefore is not specific to variants in the DNS root zone. It would also be useful to standardize the tables maintained in the IDN Practices Repository on the IANA website.

**Schedule:** Started in February 2012, 10-month duration

**Budget:** \$41,880 FY12, \$80,520 FY13 (consultants and travel cost)

Budget plan includes one ICANN staff member attending four international meetings including IETF, RIR and NOG meetings to consult with the community on the proposed Label Generation Ruleset Tool Specification. Plan also includes retaining one consultant with expertise in IETF standardization. Consultant will travel to IETF meetings to shepherd creating a technical specification through consensus building in the community. Primary skills for consultant are IETF standardization process, consensus building within TLDs and familiarity with IDNs, and IDNA specifications.

**Resources:** ICANN Staff (.1 FTE), Consultants (1)

## 2. Label Generation Ruleset Process for the Root Zone

**Project 2.1:** Determining the approach to developing the code point repertoire and the label generation process for the root zone.

**Description:** This project develops, in consultation with the community, the approach to define allowed code points, corresponding variants, and related states for IDN Variant TLDs.

**Rationale:** Following the Board decision on what type of variants to allow, community needs to discuss and agree on the process to handle variants in the root.

**Schedule:** Start in January 2013, 9-month duration

**Budget:** \$627,420 FY13, \$165,490 FY14 (consultants and travel cost)  
Budget plan includes recruiting and building a team of volunteers representing the diverse ICANN community and with expertise in IDNA, linguistics and policy. Volunteer team and staff will meet at two meetings to carry out the work of the project. One of these meetings will be at the regular ICANN meeting, while the other will be specially organized for this purpose.

Budget plan will also include hiring consultants with subject matter expertise in IDNA, policy, linguistics, and project management.

**Resources:** ICANN Staff (1 FTE), Consultants (3), Volunteers

**Project 2.2:** Implement Label Generation Process for the Root

**Description:** Depending on the outcome of project 2.1, work ranges from keeping the status quo to establishing a comprehensive table for each script/language to be used in the root.

**Rationale:** Implementation of process developed in project 2.1.

Project 2.2 is too far into the future to plan at this point. If needed, this project would likely be executed during FY14.

## 3. Examining the Feasibility of Whole-String Variants

**Project 3:** Whole-String Variants Feasibility Study

**Description:** Study the feasibility of delegating whole-string variants in the root.

**Rationale:** While the main focus of the final Integrated Issues Report was character-level variants, one of the case studies argued for including whole-string variants in the root. The final Integrated Issues Report identified significant challenges with whole-string variants. Thus more work to analyze potential approaches in this area is needed if whole-string variants are to be considered for implementation in the root.

**Schedule:** Start in April 2012, 6-month duration

**Budget:** \$122,512 FY12, \$130,550 FY13 (consultants and travel cost)  
Budget plan includes hiring consultants with expertise in technical (including social and linguistic) issues, consensus building skills within the community and project management. Consultants will travel to one ICANN meeting as well as travel to ICANN offices to work with staff on developing the study.

**Resources:** ICANN Staff (.6 FTE), Consultants (2)

#### **4. Enhancing Visual Similarity Processes**

##### **Project 4.1:** Visual Similarity Process Enhancement

**Description:** Develop an enhanced visual similarity process for the root that is as predictable and repeatable as possible.

**Rationale:** During the discussions in the development of the final Integrated Issues Report, a number of the case study teams suggested ways to improve the visual similarity processes. In SAC 052, SSAC also pointed out that further review and modifications of the String Similarity Review process are clearly required to reduce ambiguity and increase consistency in the process. It should be noted that this project could be considered independently of the IDN variant TLD issue. It has value on its own and can be executed outside the umbrella of IDN variant TLDs if desired.

**Schedule:** Start in January 2013, 9-month duration

**Budget:** \$661,230 FY13, \$172,350 FY14 (consultants and travel cost)  
Budget plan includes recruiting and building a team of volunteers representing the diverse ICANN community with expertise in IDNA, typography and policy. Volunteer team and staff will meet at two international meetings to carry out the work of the project. One of these meetings will be at the regular ICANN meeting, while the second meeting will be special meeting that ICANN will organize.

Budget plan will also include hiring consultants with subject matter expertise in IDNA, policy, typography, and project management. In addition to joining staff

and volunteers at the global meetings, consultants will be funded to travel to ICANN offices twice to work with staff.

**Resources:** ICANN Staff (1.1 FTE), Consultants (3)

#### **Project 4.2: Improved Visual Similarity Process Implementation**

**Description:** Scope of work depends on the outcome of project 4.1. Possible work ranges from keeping status quo to filling out a comprehensive table containing all the allowed code points in the root, so that visual similarity determinations can be made objectively.

**Rationale:** Implementation of enhanced process developed in project 4.1.

Project 4.2 is too far into the future to plan at this point. If needed, this project would likely be executed in FY14.

### **5. Examining the Technical Feasibility of Mirroring**

#### **Project 5: Mirroring Variants Feasibility Study**

**Description:** Study the technical feasibility of mirroring variants in the root.

**Rationale:** One potential treatment of variants is mirroring, whereby two or more labels use some technology (currently a choice between CNAME and DNAME DNS aliasing records) to ensure they provide the same result in the Domain Name System. (Section 4.1 of the Integrated Issues Report discussed the current limitations of this approach)

Another alternative to using specialized DNS records is “parallel provisioning,” whereby regular delegations are made using NS records, and the manager of the zone is obligated via contractual or other means to ensure the contents of those zones are synchronized.

Due to the distributed nature of the DNS, using these approaches is a complex challenge, as it seems difficult to ensure consistency (both vertically and horizontally) throughout the DNS tree. Even if the DNS issues could be solved, application protocols that use the DNS (e.g., the Web, e-mail) would not know of this special relation between the names, making them fail to deliver the expected result. Additionally, it appears challenging to ensure appropriate software support for products which rely on the DNS but do not have proper understanding of the many-to-one domain name relationship that mirroring creates. Finally, it seems mirroring requires a number of actors (some of which are not in direct relation

with the registrant/registrar/registry) to act appropriately and with knowledge of the variant relation of the names to obtain the expected result.

The goal of the study will be to establish whether or not it is technically feasible to implement mirroring, using either of the approaches described above, and the conditions and implications of doing it.

**Schedule:** Start in April 2012, 8-month duration

**Budget:** \$88,890 FY12, \$177,080 FY13 (consultants and travel cost)  
Budget plan includes hiring a consultant with expertise in DNS. Technical consultant will plan and conduct a technical study on the feasibility of mirroring. Consultant will travel to two ICANN International meetings and will also be funded for two trips to the ICANN offices to work with ICANN staff.

**Resources:** ICANN Staff (.4 FTE), Consultants (1)

## **6. Examining the User Experience Implications of Active Variant TLDs**

### **Project 6: Variants With and Without Mirroring, User Experience Study**

**Description:** Study the implications on user experience of variant TLDs in both mirrored and non-mirrored fashion.

**Rationale:** Project 5 studies the technical feasibility of mirroring. Even if mirroring were deemed feasible, there could be user-experience implications in the way mirroring is implemented that need to be studied.

Another potential treatment for variant TLDs is to consider two or more labels, with their management conducted by the same party (i.e. a single registry); but with no requirement that the contents of the zones and the delegations therein be mirrored. This treatment recognizes potential legitimate reasons for the contents of the various zones and the applications they host to diverge, while still ensuring that the risk of user confusion is minimized by having one party manage eligibility and delegation policy between these multiple zones. This allows contextual rules to be established that address local requirements concerning confusability, e.g., allowing a website for one name and another different website for the variant.

**Schedule:** Start in April 2012, 8-month duration

**Budget:** \$53,930 FY12, \$426,512 FY13 (consultants and travel cost)  
Budget plan includes recruiting and building a team of volunteers representing the diverse user community. Volunteer team and staff will meet at a meeting that ICANN will organize.

Budget plan will also include hiring consultants with subject matter expertise in user experience, and DNS. Consultants will travel to two ICANN International meetings and join the other meeting to work with ICANN staff and volunteers.

**Resources:** ICANN Staff (.4 FTE), Consultants (2)

## **7. Updates to ICANN's gTLD and ccTLD Programs**

**Project 7:** Implementation of updated new gTLD program and ccTLD process

**Description:** Scope of work depends on the outcome of projects 2.1 and 4.1. This project implements the changes needed as a result of the Label Generation Ruleset and the enhanced Visual Similarity processes.

Project 7 is too far into the future to plan at this point. If needed, this project would likely be executed in FY14.

## **8. Updates to ICANN and IANA Operations**

**Project 8:** Implementation of Updated ICANN and IANA Processes

**Description:** Scope of work depends on the outcome of projects 2.1 and 4.1. This project implements the changes needed in ICANN and IANA processes and operation as a result of the Label Generation Ruleset and the enhanced Visual Similarity processes.

Project 8 is too far into the future to plan at this point. If needed, this project would likely be executed in FY14.

### **Team Observations:**

1. To deliver on the ambition to be able to present a decision in principle by December 2012 on whether variant TLDs can be delegated, the following set of activities must be completed by November 2012:
  - Project 3: Whole-String Variants Feasibility Study
  - Project 5: Mirroring Variants Feasibility Study
  - Project 6: Variants With and Without Mirroring: User Experience Study

It is necessary to finish projects 3, 4, and 6 in order to have all the information required to start project 2, the Label Generation Ruleset process for the root. The

LGR process needs to know all the variant states (e.g., block, active) that would be considered, along with the types of variants (e.g., exchangeable variants, whole-string variants) to be implemented.

However, no variant TLDs can actually be delegated until the necessary community work on the code point repertoire and label generation process for the root has been sufficiently well developed.

2. All of the projects consider a Project Leader consultant that would be the main representative of the project to the community. Also, each project considers a Project Manager consultant to help coordinate the work. Both consultants' costs are built into each project budget.
3. There are no dependencies on the new gTLD program launch. The new gTLD program, however, could benefit from the knowledge gained by completing the Project 4 Visual Similarity Process Enhancement.
4. The Variant IDN Project continues to be a multiyear ICANN commitment to continue to improve the user experience in using IDNs. It might make sense to create an IDN Variant Issues Program to have a common umbrella to track progress and address issues that relate to more than one project.



## Timeline of Proposed Project Plan for Next Steps

