



Internationalized Domain Names

ICANN Meetings
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ICANN IDN Activities Timeline

- ☞ March 2001- Creation of ICANN Board IDN Working Group (Melbourne)
- ☞ June 2001- IDN Working Group Status Report (Stockholm)
- ☞ September 2001- IDN Working Group Final Report (Montevideo)
- ☞ September 2001- Creation of IDN Committee (Montevideo)
- ☞ June 2002- Final Proceeding Report of IDN Committee (Bucharest)
- ☞ June 2002- Extension of IDN Committee until Shanghai (Bucharest)
- ☞ October 2002- Further Extension until Amsterdam (Shanghai)
- ☞ December 2002- Further Extension until the end of 2004 Annual Meeting (Amsterdam)
- ☞ December 2002 - Creation of ICANN President's IDN Registry Implementation Committee (Amsterdam)

Members of the ICANN IDN Committee

- ✓ Vincent Wen-Sung CHEN
陳文生
(TWNIC)
- ✓ Mouhamet DIOP
(ICANN Director)
- ✓ Patrik FÄLTSTRÖM
(IETF/IESG)
- ✓ Qiheng HU
胡启恒
(Internet Society of China)
- ✓ Masanobu KATOH
加藤 幹之 (かとう まさのぶ)
(Committee Chair, ICANN
Director)
- ✓ John KLENSIN
(Former IAB Chair)
- ✓ Sang-Hyon KYONG
경 상 현 (景商鉉)
(ICANN Director)
- ✓ Stuart LYNN
(ICANN President)
- ✓ Elisabeth PORTENEUVE
Elżbieta PORTENEUVE
(ICANN Names Council)
- ✓ Mohd Sharil TARMIZI
محمد شحريل ترميزي
(GAC Chair)

IDN Registry Implementation Committee

- ICANN President's committee formed to address implementation issues
- Committee members include:
 - Marc Blanchet (technical expert)
 - Edmon Chung (Neteka)
 - Yann Courtel (.ca)
 - Neil Edwards (.com, .net)
 - Patrik Faltstrom (technical expert)
 - Hiro Hotta (.jp)
 - Kenny Huang (.tw)
 - Cary Karp (.museum)
 - Masanobu Katoh (chair)
 - Yang-Woo Ko (.kr)
 - Tom McGarry (.biz)
 - Andrew McLaughlin (policy expert)
 - Ram Mohan (.org, .info)
 - Hualin Qian (.cn)
 - Geir Rasmussen (.name)
 - James Seng (technical expert)

Two basic (technical) approaches to the IDN issue

Server side approach

Local Encodings (BG, BIG5, DJIS) or Unicode transformation format (UTF-8) sent directly over the internet. May require server reconfiguration, DNS redesign

Client side approach

Translate local encoding or Unicode into ASCII compatible encoding (ACE) on the user's computer

--- IETF (IESG) approved this approach (Oct. 2002)

Internationalizing Domain Names in Applications (IDNA)

- ☛ The following three documents were published as RFCs in March 2003
 - P. Fältström, P. Hoffman and A. Costello, "Internationalizing Domain Names in Applications (IDNA)", [RFC 3490](#)
 - P. Hoffman and M. Blanchet, "Nameprep: A Stringprep Profile for Internationalized Domain Names", [RFC 3491](#)
 - A. Costello, "Punycode: A Bootstring encoding of Unicode for IDNA", [RFC 3492](#)

Many Remaining Issues Addressed in Shanghai

- Permissible Code Point Issue – e.g. CJK (Chinese-Japanese-Korean) issue --
Registration and Administrative Guidelines
- Second-level IDN Implementation – Need dialogue and coordination among registries doing SLD/IDN implementation
- Whether and when to proceed and adopt non-ASCII TLDs – Need to wait and see?
- User Interface Issues
- Review Dispute Resolution Process?

CJK Issue – Character Variants

- Different characters (code points) to have the same meaning – example: the term “International”
- Chinese
 - Traditional Chinese: 國際 (570B 969B)
 - Simplified Chinese: 国际 (56FD 9645)
- Japanese
 - Modern Japanese: 国際 (56FD 969B)
 - But there is: 囯際 (5700 969B)
- Other Possible Combination:
 - 國際 (570B 9645)

Joint Engineering Team's Internet-draft on CJK Characters

- Provides administrative guidelines for registries that wish to implement characters drawn from Chinese, Japanese and Korean scripts
- Is a comprehensive framework for character equivalence mapping, including the concept of IDN “packages” that include the registrant’s requested domain name and equivalent variations

Beyond CJK characters

- Many languages will have very simple and straightforward character equivalence tables. E.g. German and most other European languages.
- Other European languages will present more complications. E.g. languages using Greek or Cyrillic script
- We need to rapidly identify character sets of interest to particular registries and identify relevant local communities that can develop a reliable table of equivalents and associated rules

Implementation of IDNA Specification

☞ Risks

- Widespread user confusion
- New opportunities for cybersquatting

☞ Risk reduction

- Adoption of sensible registry-level policies
- Coordination of consistent technical implementations across DNS registries

Issues for ICANN Rio de Janeiro Meetings

- ☞ Update: Status of IDNA protocols
- ☞ Implementation issues:
 - Topic Paper on Standards for IDN Authorization
 - VeriSign DNS nameserver changes
 - Creation of character variant tables
- ☞ Broader policy issues:
 - VeriSign Web Navigation – role for DNS

Topic Paper on Standards for IDN Authorization

- Title: Standards for ICANN Authorization of Internationalized Domain Name Registrations in Registries with Agreements
- Summary of major issues addressed in paper



Topic Paper on Standards for IDN Authorization

ICANN's role is limited

- Would be a mistake to pursue burdensome/intrusive approach – to micromanage registry-level implementation
- Contractual responsibility with registry operators(gTLDs .com, .net, .org., .biz, .name, .pro, .aero, .coop, .museum) to expressly authorize registration of IDNA-compliant internationalized domain names

Topic Paper on Standards for IDN Authorization

- What kinds of standards to apply in authorization?
 - Mandate compliance with applicable technical standards
 - Secure registry commitment to collaborate with affected communities, relevant experts and other registries in developing appropriate language-specific registration policies

Topic Paper on Standards for IDN Authorization

Goals of Standards

- For ICANN to fulfill responsibility to ensure standards compliance and universal compatibility
- Establish an expectation that registries will implement language specific rules as needed
- Allow registries to develop the policies they deem best without ongoing micromanagement

Topic Paper on Standards for IDN Authorization

- ICANN Standards for Authorization of IDNA Registrations
 - Four mandatory requirements that the registries would be required to agree to as the conditions for ICANN authorization to begin accepting IDNA-compliant domain name registrations
 - Two strong recommendations to registries that are not mandatory

Topic Paper on Standards for IDN Authorization

- Mandatory Requirements for Authorization
 - Strict compliance with applicable technical standards
 - Inclusion based approach for identifying possible code points
 - Association of registered domain name with one or more languages; language specific rules; and registration only when variants table available
 - Collaboration with IDN Implementation Committee on variants tables and registration policies

Topic Paper on Standards for IDN Authorization

☞ Recommendations for Authorization

- Limit domain labels to characters associated with one language only
- Provide customer service capabilities in all languages for which offer internationalized domain name registrations

Topic Paper on Standards for IDN Authorization

Procedure for Application of Standards

- ICANN obtains feedback from ICANN community
- Registry submits to ICANN an agreed statement of its commitment to abide by the four mandatory requirements
- ICANN provides written authorization to the registry to begin accepting IDNA-compliant IDN registrations

Topic Paper on Standards for IDN Authorization

Basic Summary of Approach

- Set a minimum set of vital requirements
- Get out of the registries' way as they do their best to implement IDNs in collaboration with local language communities, experts, and registries

Topic Paper on Standards for IDN Authorization

Conclusions/Recommendations

- The ongoing IDN implementation tasks of common concern to all registries implementing IDNA – such as the development of character variant and equivalence tables in consultation with local experts and affected registries – must proceed
- To assure the rapid introduction of IDNs in the major languages' character sets, the development of language-specific rulesets must proceed in parallel, in both formally-constituted and ad hoc groupings of experts and registries (both gTLDs and ccTLDs)



Thank You Very Much