12 April 2005

Cluster One B2 Assessment Report

1. Issue: Assessment for the Mechanism over Multilingual Naming Systems

The issues on multilingualization of the Internet naming system, including both the existing system and the emerging systems such as keyword lookup.

2. Institutions:

- Internet Engineering Task Force (IETF)
- Internet Corporation for Assigned Names and Numbers (ICANN)
- International Telecommunications Union (ITU)
- International Standards Organization (ISO)
- UNESCO
- MINC (Multilingual Internet Naming Consortium)
- National Governments
- ccTLD Registries and gTLD registries for IDN system
- Independent private companies for keyword lookup system
- Bottom-up Language Group Organizations: e.g. Joint Engineering Team (JET)[1], Chinese Domain Name Consortium (CDNC)[2] for AP region and Chinese language, other bottom-up script or alphabet-specific groups and organizations and technical development groups

3. Relationship to the Internet:

The Multilingual Naming System (MNS) is the extension of the Internet naming system to include the diversified alphabets and languages used by most people of the world. It includes the Internationalized Domain Names (IDN) work which is ongoing, most notably in the IETF, as well as alternative approaches such as the keyword lookup system.

---

[1] Joint Engineering Team (JET) was initiated by CNNIC, JPNIC, KRNIC and TWNIC. Beside protocol standardization, its concerns were especially on the necessary features of MDNs reflecting languages/cultures. Some languages have characters overlapped among countries/economies and some characters are/should be considered to be identical in some countries. Such efforts were reflected on "Guidelines for the Implementation of Internationalized Domain Names" posted by ICANN, and IETF Informational RFC3743 "Joint Engineering Team (JET) Guidelines for Internationalized Domain Names (MDN) Registration and Administration for Chinese, Japanese, and Korean."

[2] Chinese Domain Name Consortium (CDNC) was set up on May, 2000 in Beijing by CNNIC, TWNIC, HKNIC and MONIC. It is mainly responsible for improving the coordination and cooperation on Chinese Domain Name (CDN).

The issue of IDN extends well beyond the need to access information over the world-wide web and needs to recognize the varied uses of domain names in email, file transfer and sharing, and other areas. Some of these extend outside the Internet per se, such as incorporation of character sets into word processors and generation of multilingual dictionaries, which are being explored technically with out assurance of satisfactory, easily implemented solutions.

Diversified MNSs are part of the logical infrastructure and critical resources of the Internet. The vital importance of developing MNSs, secure and effective administration of those resources for, and the relationship with, the Internet can be understood from the following aspects:

- The impact on the accessibility of the Internet to end users, particularly the MNSs, since the domain names determine the visibility and accessibility of a web site or any other service; by removing a domain name, all services associated to it are suddenly made unreachable.
- It is very important that the Internet evolves to be more accessible to those who do not use the ASCII character set. MNSs, accordingly, will increase access to and use of the Internet.
- It is a need for respecting and guaranteeing the cultural diversity and special interests of people in different regions.

Multilingual Naming Systems encompass both the Internationalized Domain Name (IDN) System, and other initiatives such as the keyword lookup service.

IDNs are concerned with alphabets and scripts rather than languages per se, particularly the extension of the DNS (presently defined within a subset of the ASCII character set) to encompass the Unicode standard.

Keyword lookup systems are layered over the DNS for the user interface as DNS is upon the IP address structure. Keyword lookup was initiated mainly for multilingual support for identification of website identifiers, but now it is becoming somewhat blended with keyword search. The problem with keyword lookup is that it has not yet evolved to have a technical standard or service definition.

4. Governance Mechanism:

(What mechanism(s) does the institution use to govern the Internet, directly or indirectly? Treaty mechanisms? Standard-setting mechanisms? Policy coordination mechanisms? Development assistance mechanisms? Other mechanisms?)

Much of the IDN system of governance is similar to the DNS governance mechanism. The IETF is responsible for the technical standardization and maintains its role as a technical standard discussion forum, generator, and publisher. ICANN is responsible for policies including confirmation of language code table, decision of supporting multilingual TLD, registration policy for script variant, etc. Currently, countries in Asia and Africa (generally, the actors are the NICs under the support of the their governments) are actively participating in such activities. ITU liaises and cooperates with relevant entities concerning IDN, and provides information to its memberships, including through workshops on the topic, in order to promote effectively the role of Member States in the internationalization of domain names and addresses in their respective languages, and continues to liaise and cooperate with appropriate entities in this area.

UNESCO also plays a role, through collaborative processes which bring key stakeholders together on a particular multilingual issue and facilitate what is essentially a negotiation process, e.g. over character sets.

MINC focuses on the promotion of Multilingualization of Internet names, technical coordination and liaison with other international bodies.

ISO is responsible for developing the Unicode standard on which the IDN standards and keyword lookup technologies are based.

National governments have a role in the encouragement and funding of development of working MNS systems.

Keyword lookup service providers in each country are defining the nature of their own services and decide the service policies independently based on their own definitions. To overcome conflicting issues and problems, there have been many efforts to reach the international consensus through discussions in MINC, APAN meeting and so on[3],[4]. However, there are no visible outputs so far.

The current mechanism of governance has its evident weak point in the capacity for international coordination, particularly among national governments and the intergovernmental organizations, which is actually the factor of key importance in the global programming and implementation of the multilingual naming systems. For the global deployment of MNS the key point is the international coordination among countries, while many countries have great amount of official languages, to program a top-level global design of deployment and to get the support of popular PC software vendors is extremely important.

5. Evaluation against WSIS criteria:

Process Criteria *(To what extent to the institution's Internet-related governance mechanisms meet the following criteria, given what could be reasonably expected in light of the governance mechanism used?)*	
• Multilateral	As the IDN process is basically a bottom-up one, the main actors have been gTLD operators in coordination with users and other ICANN constituencies. Emerging are private sector and ccTLD operators that are of the Civil Society nature, under the support of national governments. Language communities that have come together around specific representations of alphabets and scripts, coordinating across national borders, have been successful in launching internationally accepted IDN systems or at least are in the process of doing so with solid success perspectives. As to keyword lookup systems, it is fair to say that multilateralism is not supported due to the nature of private companies. This also applies to the transparency, democracy and full participation criteria.
• Transparent	Records of activities and related information are available on the net for free
• Democratic	The principle that guides the activities of the local or language group consortium is agreed by all participants on democratic basis
• Full participation	All interested organizations or individuals may join
Role and responsibility criteria *(To what extent do the institution's Internet-related governance mechanisms enable the different stakeholder groups to fulfill their roles and responsibilities as defined by WSIS? To what extent to the different stakeholder groups have the capacity to fulfill their roles and responsibilities?)*	
• Governments	Encourage and support the utilization of IDN in their native languages on the Internet and facilitate coordination among cross-border groups which use the same alphabet/script.
• Private Sector	Collaborating with IDN registries, providing IDN registrar services to end users, and through participation in IETF work. The browser companies are also contributing by releasing IDN-enabled browser for the better user convenience. Regarding keyword lookup systems, private sector is the only entity playing the role.

[3] http://www.iak.ne.kr/new/keyword/minutes/030827.htm

[4] http://www.qgpop.net/2003fukuoka/AB.html#A1

• Civil society	IDN registries: find ways to realize multilingual domain names that are in line with the international technical standards, and taking into account the national language and culture features. Regional organizations: develop comparatively universal technical solutions. ICANN: is responsible for coordinating both technical and policy issues. IETF: is responsible for standard setting with regard to the Internationalized Domain Names (IDN), publishing corresponding RFCs.
• Intergovernmental organizations	UN organizations such as ITU and UNESCO have important coordination functions.
• Other international organizations	International organizations with concern about cultural protection and language diversity such as the Multilingual Internet Names Consortium may make contribution to IDNs.
Outcome Criteria *(How effectively to the institution's Internet-related governance mechanisms contribute to achievement of the following goals?)*	
National self-management, equal capacity of name space.	
• Access for all	MNSs belong to the Internet infrastructure that can be accessed for all and especially for people who need large sets of non-ASCII characters. Note that the DNS, including of course ccTLDs, operate across the whole Internet. However, the current MNSs significantly fall short of being satisfactory in terms of access for all. IDN's technical standard applies not to the system, but to the client computer and implementation would lead to unsatisfactory coverage of infrastructure. Keyword lookup systems do not yet have any technical standard.
• Stable and secure functioning	Provided that deployment is well-coordinated, IDN should not harm the stability and security of the Internet. Keyword lookup has no report of significant problems yet.
• Multilingualism	The MNS is just one aspect of multilingualization of Internet use, access and content generation.

6. **Coordination:** *(How effectively is governance of this issue coordinated with governance of other Internet-related issues?)*

The IETF and ICANN are working with groups establishing working models for IDN implementation and prototypes and pilots to demonstrate IDN functionality with relevant communities. UNESCO and MINC are working on wider aspects of multilingualism

This is an area where policy and technical concerns interact strongly. There are few instances where the use of a language or alphabet is coincident with the jurisdiction of a single national government. Even where a names registry that decides to start an IDN operation is a ccTLD, the reach of the DNS remains global, and an ill-advised operation will have global, not only national, impact. Approaches that depend on plug-ins, for example, may easily lead to a breakdown of the global interoperability of the Internet. Further, IDNs introduce some security and stability issues of their own, like forms of homographic attacks, and problems related to confusion or collision of domain names and between domain names and other known names including trademarks.

Technical standards like Unicode are important, but in some countries and languages what is missing is a more fundamental piece, the coding of the alphabet (Khmer is often quoted as an example in this context, as are some

languages in Africa). This is also an important object for public policy attention.

7. **Overall assessment:** *(What are the points that most need improvement in order to meet the WSIS criteria?)*

Internet users who do use languages with scripts which do not use the ASCII character set, both existing and potential, have the urgent need for implementing MNSs globally.

ICANN, and organizations that coordinate through ICANN, have promoted important progress in IDNs. Testbeds and some actual live operations have fleshed out and in many cases solved the problems stemming from IDNs. The most pressing areas where progress is needed is the identification of stable character sets, developing rules on how to construct IDNs for specific languages/alphabets, and the construction and operation of testbeds with systems that are actually operational. Some policy issues that emerge are the extensions of naming collisions, not only with trademarks but also with culturally significant names.

Nevertheless, and despite efforts to date, insufficient progress has been made towards providing solutions to IDN issues, not to mention keyword lookup.

Regarding IDN implementation, the cooperation between IETF and IDN registries should be strengthened, creating a sound international environment for the further development of technical standard and action plan for global deployment.

Strengthened participation and coordination of all governments at an appropriate level in the Internet governance process is required to push forward the development and implementation of MNS solutions. Some have suggested that a treaty mechanism that focuses on ensuring the security and stability of the Internet could be introduced, while the local IDN registries would have the right to develop IDN applications and be responsible for domestic IDN administration under the direction and according to the rules of national governments.

In addition to IDN, many unsolved issues including multilingual email addresses, multilingual URI and keyword lookup also appear to need greater attention in regard to international coordination of technical and policy coordination developments.