ISO/IEC JTC 1/SC 2
Coded Character Sets
Secretariat: Japan (JISC)

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Information technology

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BUSINESS PLAN FOR JTC 1/SC 2

PERIOD COVERED: October 2011 – September 2012

SUBMITTED BY: Yoshiki MIKAMI, Chair of JTC 1/ SC 2

1.0   MANAGEMENT SUMMARY

1. 1   CHAIRMAN'S REMARKS

World Summit on the Information Society (WSIS, Geneva 2003 and Tunis 2005) adopted Action Lines. Line C8 of which says "Cultural and linguistic diversity, while stimulating respect for cultural identity, traditions and religions, is essential to the development of an Information Society based on the dialogue among cultures and regional and international cooperation. It is an important factor for sustainable development."

Another document, Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace was adopted by the UNESCO General Conference a few years before the Geneva phase of the WSIS. The first line of the recommendation says "[t]he public and private sectors and the civil society at local, national, regional and international levels should work to provide the necessary resources and take the necessary measures to alleviate language barriers and promote human interaction on the Internet by encouraging the creation and processing of, and access to, educational, cultural and scientific content in digital form, so as to ensure that all cultures can express themselves and have access to cyberspace in all languages, including indigenous ones."

Last year, I had a chance to attend a conference organized by Russian National Committee for UNESCO at Yakutsk, Saha Republic of Russia in July. There I also found many peoples in the former Soviet Union are still working on the development of input-output system for there languages.

This year, Asia-Europe Meeting (ASEM) organized Linguisic Diversity Forum on 4-5 September 2012 in Jakarta, Indonesia, and it highlighted the critically important role of media and ICT in safeguarding and promoting language diversity among four essential topics related to the strategies in protecting language diversity in Asia and Europe.

Reminding all these, I believe that quality and speed of the work of SC 2 has vital importance. SC 2 has done valuable contributions since its inception fifty years ago (1961). Since late 1980s, SC 2 experts have been working hard to develop the Universal Coded Character Set, or ISO/IEC 10646, and helped various language/script users in the world to achieve their goals of local language computing together with the support of the string ordering and comparison standard, ISO/IEC 14651.

The first version of ISO/IEC 10646-1 was created in 1993. At that time 32,884 characters were given positions in the standard. Then at the turn of the century it covered 49,194 characters (ISO/IEC 10646-1:2000). The second version, supplemented by additional code planes, increased its coverage to 96,378 characters (ISO/IEC 10646: 2003). The new edition (ISO/IEC 10646: 2011) covers around 110,000 characters. Almost all language users, even past generations who used historic scripts, are currently covered by this standard.

Also important is the fact that increasing number of countries is adopting ISO/IEC 10646 (or its subset) as a national standard for information interchange. In a few decades ago, there were many "islands" of different code users. But now ISO/IEC 10646 works as a true, seamless infrastructure of global communication both for the Internet and various types of communication, including mobile communication.

1.2   JTC 1 SC 2 STATEMENT OF SCOPE

Title: Coded Character Sets
Scope: Standardization of graphic character sets and their characteristics, including string ordering,

associated control functions, their coded representation for information interchange and code extension techniques. Excluded: audio and picture coding.

1.3   PROJECT REPORT

The Programme of Work of SC 2 is available at: http://std.dkuug.dk/jtc1/sc2/open/pow.htm

Ongoing Projects:

- 14651.00.01.00.03, ISO/IEC 14651: 2011/Amd. 1 Information technology -- International string ordering and comparison -- Method for comparing character strings and description of the common template tailorable ordering -- AMENDMENT 1 [DAM]

- 10646.00.01.00.03, ISO/IEC 10646 (Ed. 3)/Amd. 1 Information technology -- Universal Coded Character Set (UCS) -- Amendment 1: Palmyrene, Old North Arabian, Sindhi, Mro, Bassa Vah, and other characters [DAM]

- 10646.00.02.00.0, ISO/IEC 10646 (Ed. 3)/Amd. 2 Information technology -- Universal Coded Character Set (UCS) -- AMENDMENT 2: Caucasian Albanian, Psalter Pahlavi, Old Hungarian, Mahajani, Grantha, Modi, Pahawh Hmong, Mende, and other characters [PDAM]

Total Number of Projects: 53 (including subprojects)

New project/subproject: 1

Withdrawn project: 0

1.4   CO-OPERATION AND COMPETITION

SC 2 is the key organization in the area of coded character set standardization, and has official liaisons with the following organizations. There are no competitive international standards or standardization organizations.

Internal Liaisons:

ISO/IEC JTC 1/SC 22	Programming Languages, their Environments and System Software Interfaces
ISO/IEC JTC 1/SC 29	Coding of audio, picture, multimedia and hypermedia information
ISO/IEC JTC 1/SC 34	Document description and processing languages
ISO/IEC JTC 1/SC 35	User Interfaces
ISO/TC 37/SC 2	Terminographical and lexicographical working methods
ISO/TC 46/SC 4	Information and documentation – Technical interoperability
ISO/TC 211	Geographic information/Geometrics

External Liaisons

IETF/ISOC	Internet Society	A
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	A
CEC	Commission of European Communities	B
UNCTAD	United Nations Conference on Trade and Development	B
UN-ECE	United Nations Economic Commission for Europe	B
WIPO	World Intellectual Property Organization	B

WMO	World Meteorological Organization	B
TCA	Taipei Computer Association	C
UC Berkeley	UC Berkeley	C
UNICODE	The Unicode Consortium	C
W3C	World Wide Web Consortium	C

SC 2 has IRG (Ideographic Rapporteur Group) under its WG 2. This Rapporteur group focuses its work on Eastern Asia's ideographic characters, i.e. Han-characters. The participating countries are not limited to P and O members of SC 2, but other related countries and areas are also actively participating as liaison members or guests, i.e. Taiwan has been participating through TCA (Category C liaison), and Macao as a guest. At the last IRG meeting, Malaysia (O member) attended for the first time and contributed a couple of its unique Ideographs to be included in UCS.

Recently, IRG began a preliminary research work for encoding of Old Hanzi characters. In this activity, several experts from universities and academic institutes such as Beijing Normal University, East China Normal University, Ibaraki University, National Hualien Teachers College, are involved.

SC 2 has been continuously co-working with the Unicode Consortium from the first stage of the development of ISO/IEC 10646 for more than fifteen years. The Unicode Consortium was recently assigned as an Approved RS Originator Organization (ARO) of JTC 1. This assignment makes normative reference of not only the Unicode Standard, but also ISO/IEC 10646 itself, very easy for other JTC 1 standards.

SC 2 also has the established C liaison between its WG 2 and UC Berkeley to develop particular minority and historic scripts. Besides these official relationships, SC 2 has active and close relationships with several academic institutions, such as Tokyo University of Foreign Studies.

2.0   PERIOD REVIEW

2.1   MARKET REQUIREMENTS

Coded character sets and their orderings are basic infrastructure for all information and communication technologies.

Lately, because of the rapid spread of information technologies, especially Internet technologies, UCS is widely used throughout the entire world. The importance of universal coded character set is acknowledged among governmental sectors, industrial sectors and open source communities.

The number of standards which refer to UCS and the number of actual implementations based on UCS are increasing rapidly. In these circumstances, requests to keep consistencies between UCS and referencing standards are increasing. These requirements come not only from other SCs but also from standardization organizations outside JTC 1.

On the other hand, potential requests from user groups of minority and historic scripts are still strong. In these days, almost all scripts for currently used major and national languages are already encoded. However, there are a huge number of dialects and minority languages. Some of them are in danger of extinction. Moreover, the user groups of these languages are mostly lacking resources to participate in standardization activities and have few chances to satisfy their requirements.

Also, even if some of the minority scripts are standardized, it takes very long time to be implemented in operation systems and environment. The standardization activity is not the goal but the start line for their actual usage.

2.2   ACHIEVEMENTS

The following standards have been published during this reporting period.

- ISO/IEC 10646: 2011 [Ed.3]. Information technology -- Universal Coded Character Set (UCS)

2.3   RESOURCES

From the view point of the active work items, SC 2 has a few work items. However, the number of P-members, O-members, and related organizations are great in number. In this sense, SC 2 is one of the

largest and most active SCs in JTC 1. The number of current P-member National Bodies is 30 and O-member National Bodies is 21. There are also several, but not many, invited guests in WG meetings and plenary meetings from developing countries, which have no official membership, but have script expertise.

SC 2 and its WG 2 have assigned officials, and all developing projects also have assigned officials. SC 2 has sufficient resources.

3.0 FOCUS NEXT WORK PERIOD

3.1 DELIVERABLES

The 3rd Edition of ISO/IEC 10646 will be published in 2012. FDIS text is now being prepared.

3.2 STRATEGIES

SC 2 should focus in the following five issues;
1) Quick and precise standardization of newly proposed characters and scripts, especially proposals from developing countries, user groups of minority and historic scripts.
Note: SC 2/WG 2 has its own guideline to accelerate standardization work and make the criteria of standardization clear to all experts and user communities as "Principles and Procedures for Allocation of New Characters and Scripts and handling of Defect Reports on Character Names" (SC 2 N 3921).
2) Synchronization of 14651 to 10646.
Note: 14651 has been developed and maintained by SC 2 directly. Practical editing work is being done by the editing group, OWG-SORT, operated in accordance with JTC 1 directives. Also, Canadian national body kindly has been taking responsibility for its French version, in accordance with the ISO/IEC directives.
3) Maintaining consistency with countries' and areas' standards.
4) Maintaining consistency with related standards which refer to SC 2's standards.
5) Establish relationship with real user group of targeted scripts and characters.

3.2.1 RISKS

1) RISK: Possibility of standardization without feedback from the real user community.
SOLUTION: Effort to establish relationship with the real user community with the cooperation of other international organizations, governments and academic research institutes.

2) RISK: Delay of synchronization of other standards which closely refer UCS.
STRATEGY: Promote quick publication of standards, together with the information disclosure of newly standardized scripts and characters.

3) RISK: Contradictions between international standards and country standards when referencing each other.
SOLUTIONS:
- Close relationships between SC 2 and each national body.
- Maintenance of the mapping information between international standards and local standards.

4) RISK: Ad hoc solution to the requests from other SCs and standardization organizations outside JTC 1 which harm the consistency of ISO/IEC 10646 itself.
SOLUTIONS:
Welcome the requests from other SCs and other standardization organizations.
Establish close relationship with the requesters and strive to recognize the actual requirements.
Seek solutions which will not harm the consistency of the standard and satisfy the requesters' needs as the experts.

5) RISK: Confrontation between different expert/user communities of scripts to be encoded in UCS. Such situations prevent the progression of developing work.
SOLUTIONS:
It is not so easy to let different positions to be compromised. However, the effort to provide the occasion for discussion is very important.

3.2.2 OPPORTUNITIES

1. Expansion of usage in technical areas such as XML, Programming and Scripting Languages, Internet, e-Government, etc., and in a very broad global business application environment that positively impacts developed, as well as developing, countries such as the U.S., Japan, China, Cambodia, Ethiopia, and many others.

2. Consolidation and harmonization of huge coded character sets.

3. Infrastructure for improvement of information and communication technology in developing countries, areas and minority scripts users.

4. Support as ICT environment for vast area of academic research.

3.3   WORK PROGRAMME PRIORITIES

All working programs have to be developed simultaneously, and ISO/IEC14651 should catch up the modification and additional repertoires of ISO/IEC 10646 as quickly as possible.