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## **BUSINESS PLAN FOR JTC 1/SC 2**

**PERIOD COVERED: October 2007 – September 2008**

**SUBMITTED BY: Tatsuo L. Kobayashi, Chair of JTC 1/ SC 2**

### **1.0 MANAGEMENT SUMMARY**

#### **1.1 CHAIRMAN'S REMARKS**

This year is the International Language Year of United Nations, hosted by UNESCO.

On this occasion, MAAYA (the World Network for Language Diversity) and SEI (Script Encoding Initiative, UC Berkeley) requested SC2 to declare its supportive position for Language Diversity in Cyberspace. In accordance with these requests, SC2 resolved following resolution at its plenary meeting in Redmond, Washington, USA, 2008-04-25.

#### **RESOLUTION M15-02: Support for the 2008 International Year of Languages by the United Nations**

SC 2 supports the designation of 2008 as the International Year of Languages by the United Nations. The International Year of Languages will draw attention to the diversity of the world's languages, the importance of preserving these languages, and the need to provide access to them in cyberspace. The key to providing access is to be sure the scripts are in the international character encoding standard 10646 (/Unicode) and sorting order standard 14651. SC 2 requests JTC 1 to support the International Year of Languages.

The ICT standards, especially SC 2's scripts and languages related standards (ISO/IEC 10646 and ISO/IEC 14651), should serve technological infrastructure for the language diversity in Cyberspace. In that sense, I am convinced that the development of ISO/IEC 14651 with both English version and French version simultaneously is very helpful for developing countries and minority language user communities. SC 2 expressed its sincere appreciation to the Canadian national body for its strong effort to develop and take responsibility for the quality of French version of ISO/IEC 14651 in the last plenary meeting.

Also, SC 2 appreciates ISO, IEC and JTC 1 for the free availability of ISO/IEC 10646 and ISO/IEC 14651 to make the usage of these standards more easily for diverse user communities.

However, I am convinced that, we, the ICT standards developing community, should make more effort to promote our standards to diverse user communities.

### **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:

- Project 02.10646.00.05 (10646/Amd 5), Information technology -- Universal Multiple-Octet Coded Character Set (UCS) -- Amendment 5: Tai Tham, Tai Viet, Avestan, Egyptian Hieroglyphs, CJK Unified Ideographs Extension C, and other characters

Current status: FDAM

- Project 02.10646.00.06 (10646/Amd 6), Information technology -- Universal Multiple-Octet Coded Character Set (UCS) -- AMENDMENT 6: Javanese, Lisu, Meetei Mayek, Samaritan, and other characters

Current status: PDAM

- Project 10646.00.00.00.02 (Consolidation of ISO/IEC 10646: 2003 and Amendment 1 – 6), Information technology -- Universal Multiple-Octet Coded Character Set (UCS)

Current status: WD

- Project 14651.00.01.00.02, Information technology -- International string ordering and comparison -- Method for comparing character strings and description of the common template tailorable ordering -- Amendment 1

Current status: PDAM

Total Number of Projects: 58 (including subprojects)

New project/subproject: 2

New revision work: 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 31*	Automatic Identification and Data Capture Techniques
ISO/IEC JTC 1/SC 32*	Data Management and Interchange
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

\*= to be terminated.

### External Liaisons

IETF/ISOC	Internet Society	A
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	A
CCSDS	Consultative Committee for Space Data Systems	B
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 poor 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 projects have been published or progressed to the publication stage during this period.

- Project 02.10646.00.03 (ISO/IEC 10646: 2003/Amd 3), Universal Multiple-Octet Coded Character Set (UCS) -- Amendment 3: Lepcha, Ol Chiki, Saurashtra, Vai, and other characters
- Project 02.10646.00.04 (ISO/IEC 10646: 2003/Amd 4), Universal Multiple-Octet Coded Character Set (UCS) -- Amendment 4: Universal Multiple-Octet Coded Character Set (UCS) -- Amendment 4: Lanna, Cham, Game Tiles, and other characters
- Project 02.14651.00.00.00.02 (ISO/IEC 14651: 2007), International string ordering and comparison -- Method for comparing character strings and description of the common template tailorable ordering

## **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 29 and O-member National Bodies is 19. 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**

Amendment 5 to ISO/IEC 10646: 2003 and the 2nd Edition of ISO/IEC 10646 will be published.

### **3.2 STRATEGIES**

SC 2 should focus in the following six 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 vast 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.