**Business plan and convenor's report:
ISO/IEC JTC1 SC22/WG20 - INTERNATIONALIZATION**

PERIOD COVERED:
June 2000 - September 2001

SUBMITTED BY:
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# 1.  MANAGEMENT SUMMARY

## 1.1  SCOPE

Identification of elements relevant to the work of SC22 that may be affected by differences in language, culture, customs and habits; and for these elements, develop standards that enable applications to be portable across differing cultural practices; and develop a Technical Report that describes a framework for nations to provide those elements

## 1.2  PROJECT REPORT

**Project number
Description
Editors**

**22.13 (completed)**
**Second edition of TR 10176: "Guidelines for the preparation of programming language standards** ".
An amendment has been approved to align Annex A to ISO 10646. (see project 22.13.1)
**Akio Kido and Makoto Noda**

**22.13.1 (completed)**
**Amendment #1 to TR 10176: "Guidelines for the preparation of programming language
standards" to align Annex A with ISO 10646.  The TR is being published in 2001.**
**Arnold F. Winkler**

**22.30.01 (completed)**
**TR 11017: "Framework for internationalization"**
**T.K. Sato**

22.30.02.01 (umbrella project - no standard associated)
Functionality of the internationalization of applications
Keld Simonsen

**22.30.02.02 (completed)**
**ISO/IEC 14651: International string ordering.  This standard has been approved and published.**
**Alain LaBonté**

22.30.02.02.1
Amendment #1 to ISO/IEC 14651: International string ordering, to align the template table with the rapidly growing repertoire of ISO/IEC 10646.
Alain LaBonté

22.30.02.03
ISO/IEC 14652: Specification method for Cultural Conventions
Keld Simonsen

22.15435
ISO/IEC 15435: Internationalization API
Keld Simonsen

**22.15897**
**ISO/IEC 15897: Procedures for registration of cultural elements.** An draft to align the registration process with the process for character set registrations in ISO/IEC 2375 is being prepared.
**Keld Simonsen**

For details see later discussion of projects in section 5.

## 1.3  COOPERATION AND COMPETITION

Internationalization is considered a high priority issue by many groups that develop standards, most important amongst them are:

*  Unicode Consortium
*  Subcommittees and individual working groups of JTC1, e.g. SC22/WG4 - COBOL
*  ISO TC46/SC2
*  CEN/TC304, various working groups
*  W3C, the World Wide Web Consortium

WG20 is cooperating with all of the above mentioned groups, either through already existing liaisons, or through individual contacts.

# 2.  PERIOD REVIEW

## 2.1  MARKET REQUIREMENTS

WG20 believes that through the proliferation of PCs in homes world-wide, and the ubiquitous World Wide Web, internationalization has become a very important factor in the creation of applications and thus all programming languages.

## 2.2 ACHIEVEMENTS

ISO/IEC 14651 has been approved and is published on CD.

ISO/IEC TR 10176 and Amendment #1 have been published as the second and third edition of TR 10176.

## 2.3 RESOURCES

Please see 6.1.3 for the general resource situation.  WG20 has to prioritize its work to make best use of the scarce resources available.

# 3.  FOCUS FOR THIS PLANNING PERIOD

## 3.1 DELIVERABLES:

A.  WG20's focus for 2001 and 2002 will be to amend the international string ordering standard ISO/IEC 14651 to align the character repertoire with the rapidly growing repertoire of ISO 10646, parts 1 and 2 .

B.  WG20 will also work on amending ISO/IEC 15897 – Registration of cultural elements, to align the registration process with the process for character set registrations in ISO/IEC 2375.

## 3.2 STRATEGIES:

WG20 has 2 principle strategies:

A.  Technical excellence

B.  Liaisons with all interested parties

### 3.2.1 RISKS

The risks with the chosen strategies are:

A.  The quest for technical excellence slows down the process

B.  Liaisons with individual interests create complex requirements which are harder to meet

C.  Lack of resources slows down the process

### 3.2.2 OPPORTUNITIES

A.  Technical correctness of the WG20 work ensures that resulting standards can and will be implemented immediately after publication, sometimes even before.

B.  WG20 develops standards and Technical Reports with contributions and requirements from many liaisons. This ensures comprehensive standards that provide excellent service to a wide variety of users.

## 3.3 WORK PROGRAM PRIORITIES

Culturally correct processing is important for all facets of data processing.  Culturally correct ordering of data is one of the most complex tasks due to contradicting requirements from various parts of the user community.  WG20 was using most of its resources to complete IS 14651, a standard that allows international string ordering with the option to tailor the output to satisfy specific user communities (e.g. geographic areas, cultural groups, businesses).  Amending the template table that defines the sort order with new characters from the rapidly growing repertoire if ISO/IEC 10646 is time critical.  In light of the extensive use of international search engines this task deserves highest priority in the work of WG20.

Specification methods for cultural conventions and a registry of cultural elements allow developers of programming languages and of user applications alike to write code against well defined, approved sets of such conventions in consistent formats.  TR 14652 and IS 15897 are examples of WG20 work that support these groups of users.  For the remainder of 2000 and in 2001 these documents have priority in WG20.

# 4. Membership of SC22/WG20

## 4.1 Liaisons and representatives to and from SC22/WG20

### 4.1.1 **Liaisons** from WG20

```
Liaison from WG20      Organization        Subject
Arnold Winkler         SC2/WG2             Character Sets
Keld Simonsen          SC22/WG15           POSIX
Miles Ellis            SC22/WG5            Fortran
Keld Simonsen          SC22/WG14           C
Keld Simonsen          SC22/WG21           C++
Alain LaBonté          GUIDE/SHARE-Europe  I18n
Keld Simonsen          CEN/TC 304          I18n, character set technology
Alain LaBonté          CEN/TC 304          I18n, character set technology
Alain LaBonté          SC35                User System Interface
Keld Simonsen          TC37/SC2/WG3        Alphabetic ordering
Ken Whistler           Unicode             Character sets and I18N
Arnold Winkler         W3C I18N            I18N for the WWW
and Keld Simonsen
Keld Simonsen          TC46/SC2            Transliteration
                       SC32/WG3            SQL
```

### 4.1.2 **Liaisons** to WG20

```
Liaison to WG20        Organization        Subject
Arnold Winkler         SC2/WG2             Character Sets
Keld Simonsen          SC22/WG15           POSIX
Ann Wallace            SC22/WG4            COBOL
Miles Ellis            SC22/WG5            Fortran
Jim Melton             SC32/WG3            SQL
Keld Simonsen          SC22/WG14           C
Keld Simonsen          SC22/WG21           C++
Alain LaBonté          GUIDE/SHARE-Europe  I18n
Marc Küster            CEN/TC 304          I18n, character set technology
Ken Whistler           Unicode             Character sets and I18N
                       W3C I18N            I18N for the WWW
                       SC35                User interface
John Clews             TC46/SC2            Transliteration
```

**note:  CEN/TC 304 is now called European Localization Requirements**

### 4.1.3 Liaison requests

SC22/WG20 is in the process to establish liaisons with:
LI18NUX, the LINUX internationalization group

WG20 encourages SC22 to establish liaison with the Internet Engineering Task Force, IETF.  WG20 is providing document SC22/WG20 N836 as a draft "Statement of mutual benefits and responsibilities".

### 4.1.4 Representatives

None at this moment.

### *4.2  Meetings of SC22/WG20*

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1     November 1991     Sunnyvale          USA
2     April 1992        Paris              France
3     October 1992      Québec             Canada
4     April 1993        Copenhagen         Denmark
5     October 1993      Tokyo              Japan
6     April 1994        Oxford             United Kingdom
7     October 1994      Cupertino          USA
8     May 1995          Paris              France
9     September 1995    Copenhagen         Denmark
10    April 1996        Kyoto              Japan
11    September 1996    Vienna             Austria
12    Spring 1997       Québec             Canada
13    November 1997     Cairo              Egypt
14    June 1998         Dublin             Ireland
15    October 1998      Tel Aviv           Israel
16    May 1999          Malvern            USA
17    November 1999     Copenhagen         Denmark
18    May 2000          Québec             Canada
19    Oct. Nov. 2000    Malvern            USA
20    May 2001          Tübingen           Germany
Planned meetings:
21    October 2001      Malvern            USA (collocated with CLAUI)
22    May 2002          Tromsø             Norway
23    October 2002      ???                Japan ???
```

### *4.3  Convener of WG20*

Arnold Winkler is convenor of WG20 until 2002.

He will not "run" for convenor any more, when his current term expires.


# 5.  Projects of SC22/WG20

### *5.1  Status of active projects*

#### 5.1.1  TR 11017: Framework for internationalization

a        Framework for internationalization
b        JTC1 22.30.01
c        A type 3 Technical Report
d        T. K. Sato
e        The TR 11017 has been published in English and French.  The project is completed.

#### 5.1.2  Second edition of TR 10176

a        Guidelines for the preparation of programming languages standards
b        JTC1 22.13
c        A Type 3 Technical Report
d        A. Kido and M. Noda
e        The TR has been published.  The project is completed.

#### 5.1.3  Amendment #1 to TR 10176 = third edition of TR 10176

a        Amendment to "Guidelines for the preparation of programming language standards"
b        JTC1 22.13.1
c        An amendment to a type 3 Technical Report (according to ITTF this is a new edition of the TR)

d       Arnold F. Winkler

e       Update was needed for Annex A due to the rapid additions to the repertoire of ISO 10646. The new Annex A has been approved, the TR has been published as the third edition of the TR (there are no amendments to TRs).

### 5.1.4  International string ordering  (future ISO/IEC 14651)

a       International string ordering (Method for Comparing Character Strings and Description of the Common Template Tailorable Ordering)

b       JTC1 22.30.02.02

c       International Standard ISO/IEC 14651

d       Alain LaBonté

e       The standard has been approved and is published on CD as requested by WG20.

f       WG20 initiated work to align the repertoire of characters with the expanded repertoire of ISO 10646, parts 1 and 2. The PDAM #1 text and the revised Common Temp late Table have been prepared and submitted for concurrent registration and PDAM ballot. Work on PDAM #2 for the expanded repertoire of 10646 is necessary.

### 5.1.5  Cultural convention specification TR  (future ISO/IEC TR 14652)

a       Specification method for cultural conventions

b       JTC1.22.30.02.03

c       Technical Report ISO/IEC TR 14652

d       Keld Simonsen

e       WG20 changed the document type from standard to a Type 1 Technical Report.

f       The disposition of comments from the PDTR ballot and a new document have been prepared by the editor for DTR ballot. This ballot ended with too many NO votes and technical comments – the editor and WG20 will prepare a disposition of the comments and prepare a new draft for PDTR ballot.

### 5.1.6  Internationalization API standard  (future ISO/IEC 15435)

a       Internationalization API standard

b       JTC1 22.15435

c       International Standard ISO/IEC 15435

d       Keld Simonsen

e       Authorization for combined registration and CD ballot has been granted.

f

### 5.1.7  Procedures for registration of cultural elements  (ISO/IEC 15897)

a       European registration standard

b       JTC1 22.15897

c       International Standard ISO/IEC 15897

d       Keld Simonsen

e       This international standard is the result of a fast-track processing of EN 12005 to become an international standard. SC22 assigned the maintenance of this standard to WG20.

f       The registration and review process will be addressed in a manner, similar to the character set registration in ISO/IEC 2375. A new draft document is being reviewed by WG20. CEN is submitting 30+ generic locales (results of CWA 14051) for registration.

## *5.2    Candidate projects*

### 5.2.1  Functionality of Internationalization

a       Functionality of the internationalization of applications

b       JTC1 22.30.02.01

c       A number of standards, see subproject descriptions below

d       Keld Simonsen

e       This is an umbrella project

This project is the umbrella project for the development of specific standards for functionality of the internationalization of applications, such that users can specify their cultural requirements, and obtain consistent behavior across system platforms and applications.  Work is being done on the following projects:
- International string ordering (IS 14651)
- Specification method for cultural conventions (TR 14652)
- Internationalization APIs (IS 15435)
- Procedures for registration of cultural elements (IS 15897)

**WG20 has presently no specific plans for additional projects except for Annex A in TR 10176 and the amendment to the string ordering standard to synchronize with the growing repertoire of ISO 10646.**

# 6. Conclusions and requests

## 6.1 Issues

### 6.1.1 Cultural and linguistic adaptability and user interfaces (CLAUI)

The next CLAUI meeting is planned to be held on October 4-5, 2001, co-located and directly following the WG20 meeting in Malvern (Oct 1-3).  Contributions are welcome, without documents we will not conduct a meeting.

### 6.1.2 Resources for standards development

The biggest issue in SC22/WG20 - as in many other standards developing organizations - is that companies can not afford to make enough resources available for speedy development of formal standards.  For many participants in our meetings, the meeting time is the only time they can spend on the projects.  Additionally, travel budgets are tight, especially after the web bubble burst in 2000, thus restricting the participation even further.  WG20 has currently stable participation from 4 NBs and sometimes participants from other NBs.  Meeting participation varies between 6-8 people.

### 6.1.3 WWW home page for SC22/WG20

The home page address is   http://www.dkuug.dk/JTC1/SC22/WG20/
The web site contains:
* Introduction and explanation of SC22/WG20 activities
* Working drafts of standards from SC22/WG20
* SC22/WG20 documents for electronic distribution
Keld Simonsen maintains the home page, Arnold Winkler provides most WG20 documents in web-ready form.

### 6.1.4 Document distribution

SC22/WG20 has distributed documents in paper form to an extensive distribution list for many years.  With advise and help from the SC22 secretariat, the distribution method has been switched to mainly web based distribution.  The need for paper copies has gone from 85 to less than 10 - quite a success.

## 6.2  Requests to the SC22 plenary

**6.2.1  TR 10176 table in Annex A on the ITTF website – endorse document N838 (SC22 N3249).**

**6.2.2  Ask SC22 to establish a liaison with IETF. WG20 provides a draft statement of mutual benefits for the liaison between SC22 and the IETF in document N836.**

**6.2.3  Asks to approve a project for a revision of TR 10176, to align Annex A with the repertoire of 10646, parts 1 and 2, taking in account the proposed method in N838 (SC22 N3249).**

**6.2.4  Approve concurrent registration and PDAM ballot for Amendments #2 and subsequent ones to ISO/IEC 14651.**

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