

# Information technology: I18N in ISO/IEC JTC 1/SC 22 – the key to culturally correct programmes

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What in the world is "I18N"? Try to find I18N in a dictionary and you will fail miserably. Only a computer maven will be able to tell you that this abbreviation stands for "Internationalization" (and might add: ... because it starts with an "I", ends with an "N", and there are 18 letters in between...). Internationalization is such a new concept for computer programmes that the expression has not yet found its way into dictionaries or encyclopedias. I18N provides a framework that allows programmes to be written in a way that one and the same version can be used anywhere in the world – without the need to be specifically adapted to the local script and other cultural conventions such as the formats for date and time and numeric values, or the order of names in a telephone book.

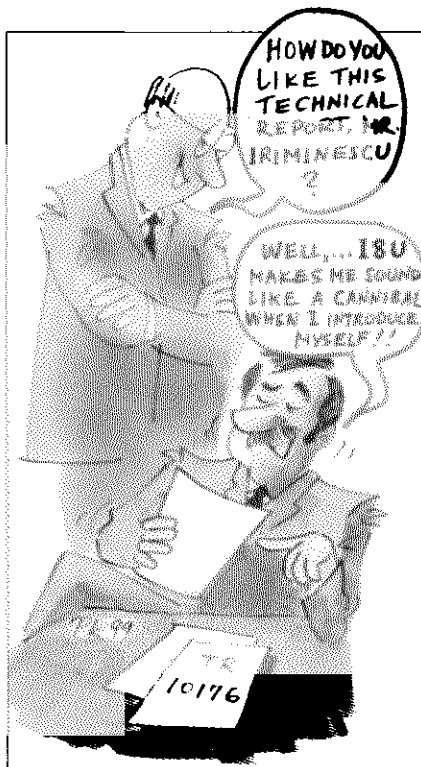
Before you think "Why would I care?" consider the advantage of storing all customer names and addresses in one data base, even if some of them live in Russia, or Saudi Arabia or in Korea. Consider the cost savings for a multinational organization in supporting just one application programme instead of separate ones for each subsidiary in foreign countries. And consider the opportunities of one multilingual web site which correctly carries your message to all parts of the world.

ISO/IEC/JTC 1/SC 22 is the committee that standardizes programming languages and system interfaces. SC 22 realized early that the standardized introduction of the concept of I18N into programming languages and operating systems was a prerequisite for the development of worldwide applications. In 1988, SC 22 suggested and JTC 1 approved the creation of a working group for internationalization – SC 22/WG 20. Its programme of work was defined as:

*Identification of elements relevant to the work of SC 22 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*

- Working closely with I18N specialists from various countries<sup>1)</sup> and from working groups for the standardization of programming languages such as C, C++, COBOL, and Fortran, WG 20 has produced two Technical Reports. The first is TR 11017 – *Framework for Internationalization*; the second is a revision to TR 10176 – *Guidelines for the preparation of programming language standards*, containing specific guidance on "internationalizing" future language standards.



These technical reports provide the framework for the current and future work of WG 20 and advise the committees for the standardization of programming languages on the implementation priorities of I18N features. Through continuous liaison and co-operation within SC 22, the next revisions of the major programming language standards promise far-reaching support for the *Universal Coded Character Set* of ISO/IEC 10646, (a.k.a. Unicode), culturally correct ordering<sup>2)</sup>, and presentation conventions<sup>3)</sup>.

WG 20's strategic direction is to provide standards for the culturally sensitive areas defined in the TR 11017 framework document. The standards will be instrumental in supporting the implementation of the guidelines contained in TR 10176.

Current projects are standards for the following subjects:

- ISO 14651, *International string ordering (addressing sorting of character strings)*,
- ISO 14652, *Specification methods for cultural conventions*,
- ISO 15435, *Internationalization APIs (Application Programming Interfaces)*, and
- ISO 15897, *Registration procedure for cultural elements*. This registration standard was developed by CEN/TC 304 and fast-tracked as an ISO/IEC standard in 1998; the maintenance was assigned to WG 20.

The concepts of these draft standards are stable and WG 20 is applying final touches to the documents. Programming language standards such as Fortran 2000 and COBOL 2000, as well as C and C++, are implementing the internationalization features as specified in the WG 20 standards to allow the creation of internationalized programmes for the worldwide market.

You should be seeing more and more internationalized software, based on SC 22 standards. The systems will be easier to use, because they speak your language and present data the way you expect to see it.

And some time soon you might be able to find "I18N" or the word "Internationalization" in dictionaries, too. □

1) National Bodies that consistently participate in SC 22/WG 20: Canada, Denmark, Egypt, France, Germany, Ireland, Israel, Japan, Sweden, United Kingdom, United States.

2) For example: The letter *ä* sorts with the *a* in the German language, but sorts after the *z* in Sweden.

3) For example: 2/8/99 means 8 February, 1999 in the United States, but not in the United Kingdom where it is written 8/2/99.