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Vol. 2, No. 1 Spring 1993

Standards Program Office
Bureau des normes

Though Not Glamorous, Standards Are Vital

Issues raised by the Standards Program Office are beginning to be echoed by other observers and players in the IT&T standards field. The recommendations of the Hall report focus squarely on the combined issues of leadership, dissemination of information, access to the standards development process and resourcing strategies to support Canada's standards infrastructure through the present economic climate and into the 21st century.

The Standards Council of Canada is consulting widely with Canadian organizations interested in standards to better formulate its strategic plans for the future. Industry associations, user groups and various levels of government across Canada are looking expectantly for signs of recognition by the federal government of the importance of standards to industrial competitiveness and economic growth. More than lip service is needed. As well, Government must take a more active role if Canada is to exploit standards and influence their development for long term economic benefit.

The job to be done is indeed daunting. Obtaining resources to reach the goals is even more difficult. Standards as a topic lack the glamour of space stations, electronic highways or even digital cordless telephones. Yet in the evolving global information systems they are a vital element in achieving the aims of almost any technological project.

It is a curious irony that the findings of august bodies examining the economic and strategic role of standards are concluding with such conundrums as "there is a growing national stake in standards issues", "insufficient support for standards setting", "declining presence in the standards setting process", and "need for increased participation in the international standards process".

In this newsletter we look at some of the basics of IT&T standards, as well as some of the newer issues. Open System Interconnection registration, Open Document Architecture and digital cordless telephones are all important contributors to the burgeoning IT&T scene in Canada.

Bill McCrum
Director
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Canadian National Registration Authority for OSI

The base standards relating to the Open System Interconnection (OSI) Reference Model (ISO standard 7498, CAN/CSA-Z243.100) are reaching maturity in the 1990s, and many organizations are implementing and using them in products and systems. In order to implement OSI effectively, a system must be put in place to clearly identify and register the OSI information objects as identified in the specific OSI standards.

OSI information objects include:

- Organization names (numeric or alphanumeric);
- Network-Service-Access Point (NASP) addresses to identify entities on OSI networks independent of their physical locations and the types of networks to which they are attached;
- Object identifiers to distinguish application objects such as titles of OSI open-systems, titles of application processes, names of abstract and transfer syntaxes and virtual terminal environment profiles;
- Alphanumeric names for use in constructing Directory names;
- Alphanumeric names for use in X400 electronic messaging systems such as Administration Management Domain (ADMD) names.

Internationally, the CCITT and the ISO, as part of their work on OSI, have jointly developed a global, hierarchical structure for OSI registration in an international standard, "Procedures for Specific OSI Registration Authorities" (ISO/IEC 9834, CCITT X.660). This standard allows for the establishment of national registration authorities to function as second-level nodes below that of ISO, CCITT and joint ISO/CCITT. Working under this standard, countries such as

(continued on page 2)

President of ECITC visits Canada

Sten-Ingvar Nilsson

The President of the European Committee for IT&T Testing and Certification (ECITC) will visit Ottawa on April 29, 1993 to give a presentation on the latest European initiatives in the area of IT&T accreditation, testing and certification. Mr. Sten-Ingvar Nilsson was invited by the Standards Program Office, on behalf of CIGOS and the Standards Council of Canada (SCC).

ECITC is a sectoral organization under the European Organization for Testing and Certification (EOTC). Under the Commission of the European Communities (CEC) mandate BC-IT-226 and with the collaboration of the European Free Trade Association (EFTA), ECITC is in the process of establishing a European system for IT&T testing and certification. Mr. Nilsson will report on the results of Phase I of the mandate and the progress under Phase II.

The importance of the ECITC activities has motivated the North American Open Systems Testing and Certification Policy Council to establish liaison with ECITC to work towards mutual recognition. The U.S. Department of Commerce, acting through NIST, is already cooperating with two major ECITC groups -- the Open Systems Testing Consortium and the Association Française des Centres d'Essais pour les Réseaux Locaux Industriels.

Mutual recognition with Europe and other geographical regions is of fundamental importance to the competitiveness of the Canadian IT&T industry which now exceeds $35 billion a year. Even without regulatory barriers, acceptance of Canadian products is not automatically assured. Multi-vendor, cost-effective products with assurances of interoperability require widely accepted testing and certification practices based on harmonized technical procedures and criteria.

Mr. Nilsson's presentation will be held at the Standards Council of Canada's offices in Ottawa. It is hosted by the CIGOS Testing Infrastructure Group and the SCC Testing Accreditation Subcommittee IT&T Working Group. The joint CIGOS/SCC group, chaired by SPO's Os Monkewich, is working to establish an SCC capability for laboratory accreditation in the IT&T sector to meet Canadian needs. This group has collaborated with ECITC and NIST to produce a harmonized interpretation of ISO/IEC laboratory accreditation criteria for use in the IT&T field.

In December 1992, Mr. Nilsson was re-elected to a second two-year term as President of ECITC. He is also the chairman of the ISO/IEC Committee on Worldwide Recognition of Test Results which will conduct its second workshop in November in Brussels. The workshop's objective is to identify, discuss and document progress and opportunities, and make recommendations related to worldwide recognition of test results and certificates.

For more information on Sten-Ingvar Nilsson's visit please call Os Monkewich at (613) 990-4494, or fax him at (613) 957-8845.

(continued from page 1 - Canadian ...)

the United States, the United Kingdom, France, Japan and Germany have developed operating procedures and established their own registration authorities.

The Standards Council of Canada (SCC), the ISO member body for Canada and the Canadian National Organization for CCITT (CNO/CCITT) have determined that a single National Registration Authority (NRA) for OSI is appropriate for Canada. This authority administers the registration process for Canada while the Canadian Interest Group on Open Systems (CIGOS) serves as the overseeing industry body. For some time now, the Canadian Standards Association (CSA) has indicated that it is interested in serving as the OSI Registration Authority for Canada. In order to assist the NRA in its functions, the Steering Committee on Information Technology (SCIT) of the CSA has developed a five-part standard entitled CAN/CSA Z243.110, "Canadian OSI Registration Procedures and Guidelines".

After extensive review and consideration, the CSA has decided not to proceed with the implementation of the registration service because of economic and technical reasons. In January 1993, in order to promote OSI in Canada, the Standards Program Office (SPO) of DOC formed an ad hoc group to determine alternatives for the OSI community. This group includes members from CIGOS, GTA, SCC, CNO/CCITT, TBS and private industry. The group is working on a joint private and public sector effort to develop the procedures needed to establish a national registration authority for OSI in Canada. Based on its findings, it will recommend to the SCC how the NRA should be established, as well as a proposed fee structure. It is hoped that the group will complete its work by the end of this Spring.

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Office Systems and ODA — What They Mean

Word processing, electronic filing, facsimile and voice mail. Virtually every office in Canada uses at least one of these technologies, if not more. Commonly known as office systems, they consist of the integration and support of various office functions by electronic means.

Without computers and telecommunications, businesses across the country would be isolated. Effective electronic document creation, management and interchange of data are key to industries, governments and academic institutions in the information-hungry 1990s.

Over the past decade, progress made by the Information Technology (computers and microelectronics) and Telecommunications industry has allowed documents to be presented in an electronic form and received the same way. A recipient of an electronic document can choose to print it, display it on a screen, or process it further.

To ensure that documents were electronically transferred smoothly, standardized architectures and interchange formats were needed. In 1980, international standardization of a "Document Architecture" and a "Document Interchange Format" was introduced with the formation of the ISO Technical Committee on Text and Office Systems. In 1989, the Office Document Architecture (ODA) standard was formally ratified as the international standard ISO 8613 and as the CCITT T.410 series of recommendations. In 1990, "Office Document Architecture" was changed to "Open Document Architecture" because it was recognized that ODA addressed wider issues than simply office-oriented documents.

What is ODA?

ODA is an internationally standardized electronic representation for document content and structure. Though ODA is independent of any particular document transfer mechanism, it was designed to be compatible with Open System Interconnection (OSI) systems. Accordingly, ODA documents can be transferred using messaging, file transfer or magnetic media. Based on OSI concepts, it adopts a common interchange format so that receiving systems are able to understand and correctly interpret the information which has been sent. An ODA document is encoded into a data stream of bytes for storage in a file or for transmission to another system. This code is known as Open Document Interchange Format (ODIF).

ODA provides for the interchange of logically structured multimedia documents, integrating character text, raster graphics text (CCITT T.4 & T.6 recommendations for facsimile) and geometric graphics text (based on the ISO Standard - Computer Graphics Metafile) between dissimilar systems.

Adoption of ODA worldwide is relatively slow. Japan and Europe have been quicker to adopt the standard than North America. Many of the leading European suppliers of office systems have integrated ODA into their office update strategies and have developed converters which make their existing products compatible with ODA. In 1990, Canada, led by Montreal's Philips Information Systems, attempted to develop a native system based on the ODA standard. Unfortunately this project was cancelled, but not before Canada had contributed significantly to the development of the ODA standard.

Future trends

A number of developments are planned or underway to extend the features supported by ODA. Many of these will appear in the next version of the standard, or as interim amendments until the standard is updated. Several of these extensions relate to document content such as audio and videotex, as well as to the visual aspect of a document, such as colour and grey scales. A set of new additions are being developed to support applications such as spreadsheet, business graphics, table layout and data entry. As a result of these enhancements, more ODA supporting products are in development and are expected to appear on the market in the next year or so.

Since ODA is the only international standard that has provided a complete layout model as well as a logical mark-up of revisable multimedia content, it is likely that it will become more prominent in the global interchange of documents over the next few years. It is also possible that ODA will be used in conjunction with SGML (another international standard used extensively for revisable document interchange) to provide a reference/formatting model that ensures consistent presentation of both ODA and SGML documents for on-line viewing and printing. ODA provides an SGML encoding (ODL) that will facilitate this interworking between the two standards.

For more information on ODA please call Ben Ho at (613) 990-4496, or fax him at (613) 957-8845.

3rd Generation Mobile Communication Systems — The Future Wave

Dick Tracy's wrist phone may soon become a reality, thanks to third generation communications systems, commonly known as Future Public Land Mobile Telecommunication Systems (FPLMTS).

In the future, you'll be able to directly reach a friend no matter where they are in the world, as well as shop or perform any banking transaction. And information on a myriad of subjects, from education and health to sports and leisure activities, will be no further than your fingertips.

Third generation communications systems are perhaps best characterized by the idea of a hand-held, pocket-size device offering a variety of voice, data and video services that you can carry with you wherever you go. Instead of having to find a public pay phone to make a call, or using a modem to access information from a computer, you will be able to use your own personal device from any imaginable location, whether on a plane, train or in the wilderness.

Industry, academia and governments are working hard to make sure this new generation of communications products and services migrate from the realm of science fiction into our everyday lives. In 1985, the International Radio Consultative Committee (CCIR) of the International Telecommunication Union (ITU) set up a special international working group, Interim Working Party (IWP 8/13). Headed by a Canadian, it is now known as Task Group 8/1. Its task is to identify impending demands and define the characteristics of the future system. The term FPLMTS was created to describe the future system to be carried out around the year 2000 with personal communication being the major feature provided to people on the move within their offices, residences and vehicles.

The first big step toward this new generation was made in February 1992 at the World Administrative Radio Conference (WARC). A spectrum for worldwide use was identified and labelled as FPLMTS. This is the foundation to achieving common international standards.

Canadian industry and government are very involved both regionally and internationally in activities surrounding third generation communications. The Department of Communications (DOC) has provided experts to chair and participate in a number of working groups and committees studying the issue. And in many instances, Canada is providing leadership.

What does the move toward the third generation system imply? For industry, it will open up the global market for our products and services and give us a competitive edge, especially if we are active in R&D and the development of international standards. For the general public, it will enhance our ability to communicate with each other, and provide the same level of service to all Canadians no matter where we are.

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"Connexions" is published by the Standards Program Office of the Systems Interconnection Research Division, Department of Communications. It is produced for internal use only, and concentrates on issues of concern to the standards-making process for the information technology and telecommunications industry. For more information please write to us at 300 Slater Street, 16th Floor, Ottawa, Ontario, K1A 0C8, call us at (613) 990-4492, or fax us at (613) 957-8845.