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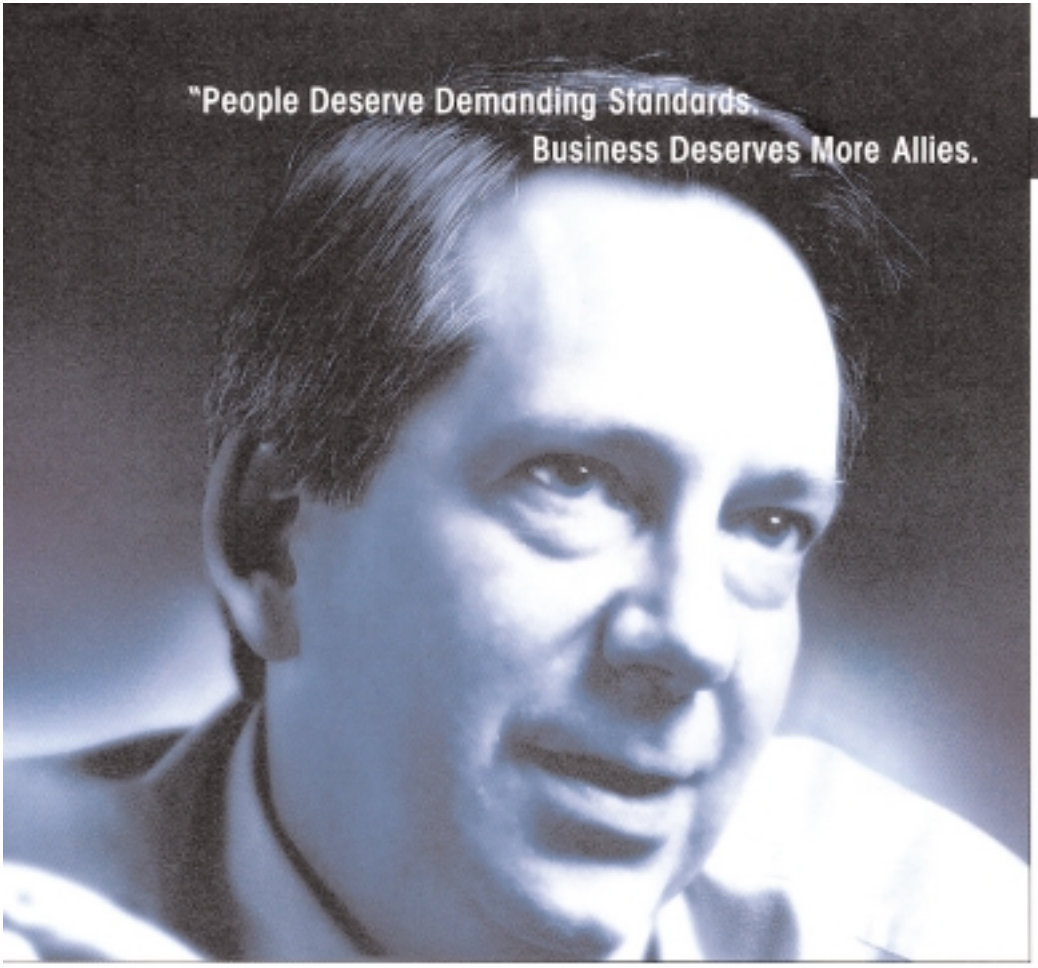
SPECIAL EDITION

CONSENSUS

Canada's Newsmagazine of Standardization

Exploring the national standards system



Robert Griffin
President & CEO- CSA International

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CONSENSUS

Canada's Newsmagazine of Standardization

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Involved in the National Standards System? Let it show!

This special edition of *CONSENSUS* will serve as the basis for a variety of materials being developed to promote the National Standards System, including fact sheets, a poster, a kiosk and an NSS wordmark. All of these materials are available to the people and organizations of the NSS. They are slated for completion by the end of March 2000. If you are interested in obtaining quantities of this issue of the magazine, or being notified when additional materials are available, please send an e-mail to nss@scc.ca, or contact the communications division using the masthead information on this page.

Welcome to your National Standards System

Standards are publications that establish accepted practices, technical requirements and terminologies for diverse fields of human endeavor. There are standards for almost everything, from the simplest screw thread to the most complex information technology equipment.

Standardization – the development and application of standards – brings people together to pursue better, safer and more efficient methods and products. Standardization is an essential element of technology, innovation and trade.

Standards touch us all many times each day. There are over 16,000 international standards in publication. One small handful of these alone – the ISO 9000 series – has been applied at over 270,000 sites around the world.

Here in Canada, we have over 7,200 National Standards of Canada that are used as the basis for commercial transactions and regulations. It would be difficult to count the number of certified products in the marketplace, but a conservative estimate would put it in the hundreds of thousands, from plumbing fixtures to life jackets.

Canadians are increasingly turning to standards and the National Standards System (NSS) for collaborative solutions to a variety of issues. As a country, we have a growing stake in managing our standardization resources strategically and collaboratively.

This issue of *CONSENSUS* provides an overview of the National Standards System as well as a peek at the draft Canadian Standards Strategy that will guide its efforts in the years to come.

We look at the major areas of standardization activity, including the development of standards and the many methods for determining conformity to standards – certification, calibration and testing, quality management systems (QMS) and environmental management systems (EMS) registration and auditor training and certification. We also look at the people and organizations that make standardization happen in Canada, including the Standards Council of Canada, which oversees the NSS.

Finally, we examine how the NSS works to the benefit of Canadians at the regional and international level.

Our hope in publishing this special edition of *CONSENSUS* is that it will serve as a valuable primer and reference tool for a broad spectrum of interests, enabling Canadians to employ standardization to best advantage. Whether you simply want to become a more informed consumer, or your company is ready to break into new markets, the information contained on the following pages will help you achieve your objectives. So read on, and welcome to your National Standards System!

Inside the National Standards System

With over 275 member organizations and 15,000 participants, Canada's National Standards System is a model for the world

Standards affect nearly every product or service we encounter in our daily lives. In Canada alone there are several thousand national standards, for everything from AC meters to zirconium.

Developing, maintaining and implementing that many standards is too big a job for any one organization. It requires a whole system — the National Standards System (NSS). For more than 25 years, the NSS has helped to ensure the safety and performance of products and services, helped to open the global marketplace to Canadians, and made Canada a leader in international standardization.

Who's who

The NSS is defined as "the system for voluntary standards development, promotion and implementation in Canada." At the centre is the Standards Council of Canada. A federal Crown corporation, the Standards Council coordinates and oversees the efforts of the NSS.

Approximately 275 organizations accredited by the Standards Council look after the day-to-day work of standards development, certification, calibration and testing, management systems registration, and auditor training and certification.

Other government and non-governmental bodies also take part in the NSS. Some of these participate in accreditation programs as partners of the Standards Council. Others work with the NSS on standards-related issues such as international trade agreements.

Some 15,000 individuals also take part. Most of these are people from industry, government, non-governmental organizations or the general public who take part in standards-development committees. Volunteers also provide their expertise to accreditation programs and advisory committees. Even the members of the Council itself are volunteers. The employers who support the work of these volunteers are important contributors to the NSS.

And in the broadest sense, anyone who uses or benefits from a standard is part of the National Standards System.

Working together

The great strength of the NSS is not just its parts — it's how they work together.

For example, product safety standards developed through the NSS help to open markets while ensuring consumer protection. National Standards of Canada are developed by committees whose collective interests provide a balance of representation of producers, consumers and others with relevant interests. These standards provide the basis for product safety regulations. Conformity assessment bodies test and certify products to those standards. International agreements allow Canadian conformity assessment results to be accepted in foreign markets, and ensure that imported products meet Canadian requirements.

Each standards development organization has primary responsibility for particular subject areas. That reduces duplication of effort, prevents the development of conflicting standards, and ensures that expertise and resources are used effectively.

Some committees work at both national and international levels. That saves time and expense, and ensures consistency between Canadian and international standards.

The NSS has procedures for consensus decision making by balanced committees. That ensures that Canada speaks with a single voice on international standards issues.

By bringing order and coordination to a complex and diverse field, the NSS has made Canada a world leader in the development and application of standards.

For more information on the Standards Council of Canada and the National Standards System, contact the Standards Council at (613) 238-3222, fax (613) 569-7808, e-mail info@scc.ca or visit the Web site at http://www.scc.ca.

The road ahead

A new standards strategy maps out the future of the National Standards System

The world of standardization is changing, and the National Standards System (NSS) is changing along with it.

Since August 1998, standards stakeholders from across Canada have been taking part in the development of a Canadian Standards Strategy. The Strategy, which will be officially unveiled in March 2000, is described as "a national master plan to provide guidance on the standardization measures and priorities necessary to enhance Canada's economic, social and environmental well-being" — a guide for the NSS as it evolves to respond to a changing environment.

That environment has changed in ways that present significant challenges to the NSS. For example, international standards have become an element in an increasing number of trade agreements. If Canada is to compete effectively in the global market, we must take part in the development of an ever-increasing number of both agreements and standards.

But standards aren't just being applied to trade or technical questions. They're also being applied to environmental issues and to social concerns such as privacy and occupational health and safety. In some areas, standards are being used as part of the regulatory process, or as alternatives to regulation.

Standards development and conformity assessment bodies are under pressure to speed up their activities and reduce costs. Principles such as consensus decision making and third-party conformity assessment are being called into question.

But while standardization is becoming more influential than ever, budgetary restraint measures by governments and business have limited the resources available for standards work. That makes it difficult to ensure that all interests are represented in standardization. Small and medium-sized enterprises (SMEs), consumers, labor, non-governmental organizations and even governments all have a stake in the development of standards but often must stretch their budgets to participate effectively.

In response to these challenges, the Standards Council of Canada launched the development of a Canadian Standards Strategy in August 1998. An advisory committee made up of representatives from industry, government, non-governmental organizations and standards organizations produced a draft strategy, which underwent a public consultation in summer 1999. The final version will be released at a special cross-Canada standards congress taking place in March 2000.

The strategy consists of eight elements that describe what Canadians need to do to ensure that standardization continues to serve the economic and social well-being of the country:

- Participate in the development of international standards, and use standards adopted or adapted from internationally accepted standards as much as possible.
- Focus efforts and resources on three key areas:
  - health, safety, the environment or other social issues which are important to Canadians
  - trade sectors that could benefit Canada
  - harmonization of standards, especially within North America.
- Keep an eye on changes in conformity assessment practices, and take part in international conformity assessment agreements that will benefit Canada.
- Make Canadians, especially public- and private-sector decision makers, more aware of the benefits and challenges of standardization.
- Encourage the use of standards in regulation and the development of Canadian public policy.
- Establish ways to apply standardization principles to new social and economic areas.
- Make the system more responsive and increase participation.
- Develop partnerships and strategic alliances among current and potential participants.

An implementation plan is now being developed.

For more information on the Canadian Standards Strategy, please visit the Standards Council's Web site at http://www.scc.ca.

The Standards Council of Canada

Custodian of the National Standards System

"Who steals my purse steals trash," William Shakespeare wrote in **Othello**. *"But he that filches from me my good name... makes me poor indeed."*

While a company's good reputation still goes a long way in the marketplace, customers today demand much more than a "good name" from their suppliers. Customers often want demonstrated proof that a product or service conforms to a standard. In addition, they may want proof of a company's commitment to effective environmental and quality management.

To satisfy these demands Canadian companies can use the standards and conformity assessment services of the National Standards System (NSS). But these confidence-building tools are themselves only as good as the "good name" of the system that produced them.

Safeguarding the system's integrity and enhancing its international reputation is the responsibility of the Standards Council of Canada, a federal Crown corporation with the mandate to promote efficient and effective voluntary standardization.

The Standards Council's accreditation programs are the cornerstone of this effort. To date, the Standards Council has accredited some 275 organizations, providing Canadians with a pool of trustworthy standardization services that can be used by regulators to achieve public policy objectives, by non-governmental interests to advance societal objectives and by businesses to win confidence in foreign markets. Among these accredited facilities are organizations that develop standards, certify and test products, register quality and environmental management systems, and certify and train auditors.

To achieve accreditation, organizations must demonstrate that they have the capabilities, resources, procedures and structures to operate effective standardization programs. Accreditation also ensures that organizations operate in a manner that is consistent with international practices.

The integrity of the NSS enables the Standards Council to secure acceptance for Canadian tests and registrations in foreign markets. The Standards Council has engaged in a number of bilateral and multilateral recognition agreements that establish the equivalence of Canadian accreditation with accreditation programs of other economies. As a result, there is a reduced need for Canadian products to undergo repeated and wasteful testing as they cross borders.

A high regard for Canada's standardization effort also enables Canadians to effectively influence the development of international standards. The Standards Council represents Canada within two of the world's foremost standardization bodies – the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). Canada has been called on to play a leadership role in many ISO and IEC initiatives, including the development of standards for quality and environmental management, hydrogen energy technology, software engineering and tools for working on live parts of electrical installations. In all, some 2,700 Canadians from industry, government and non-governmental organizations take part in Standards Council committees that contribute to the work of ISO and IEC.

A strong international effort makes it possible for Canada to adopt ISO and IEC standards for domestic use – and that means that increasingly, Canadians are building products suitable not only for other Canadians, but for the world.

Standardization can be a complex challenge, especially for small and medium-sized companies. Through its Web site (www.scc.ca) and related information products and services, the Standards Council can help Canadians effectively navigate and make use of the National Standards System. Whether the task at hand involves building a better product, conquering a new market or simply building a company's "good name", the Standards Council provides a good entry point into the National Standards System.

Developing standards

Four organizations and thousands of Canadians work together to develop national standards

At the heart of the National Standards System (NSS) are National Standards of Canada. These standards cover nearly every issue that affects Canadians: life-saving safety or medical equipment, links between telephone networks, or the environmental performance of the companies we deal with. The requirements set out in standards are critical to health, safety and business success.

But where do these standards come from?

The Standards Council of Canada has accredited four standards development organizations (SDOs). These organizations administer technical committees that are responsible for determining the content of standards.

For those standards to be workable and broadly accepted in society and business, the development process requires contributions of people from many walks of life — business, industry, science and the academic community, professional groups, labor, government, and environmental and consumer groups. Through their committee systems and the consensus standards development process, SDOs give the people most affected by a standard the opportunity to participate first-hand in its development.

SDOs are required to ensure that national interests are reflected in the standards development process so that all viewpoints receive a fair hearing and no one interest group can dominate. Substantial agreement among committee members, rather than a simple majority of votes, is necessary to achieve consensus. To honor the consensus principle, SDOs also provide a public review period to allow interested parties outside the committee system to comment on a draft standard.

The strength of this system is that the people who use and directly benefit from standards help to develop and fine-tune them. As a reward for their efforts, committee members gain a broader perspective by exchanging ideas and information with their counterparts in business, government, the non-governmental sector and the public. Since standards are regularly updated to respond to market and user needs and technological change, committee members also stay in touch with emerging developments. They are also often the first to learn of certification programs and options for applying the standards.

Once a standard has been developed, an SDO may submit it to the Standards Council for approval as a National Standard of Canada. This approval indicates that the document meets all of the Standards Council's development criteria and is the recognized Canadian standard on the subject.

About 2,700 Canadians also take part in the work of international bodies such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). These standards set common requirements for the global marketplace that become the basis of national standards. To ensure that Canadian needs and views are voiced internationally, the Standards Council coordinates the efforts of Canadian delegates, who are often drawn from the SDO committee network. Traditionally, Canada has played a significant role on the world stage, with Canadians heading the ISO committees responsible for the influential ISO 9000 quality and ISO 14000 environmental standards.

Since qualified volunteers are the backbone of standards development, the Standards Council and Canada's SDOs want to hear from you. Here's how to learn more about each organization, its programs for involving volunteers in committee work, information exchanges on the Internet or subscription services.

Organizations involved in standards development

Standards Council of Canada:
http://www.scc.ca
Bureau de normalisation du Québec (BNQ):
http://www.criq.qc.ca/bnq/
Canadian General Standards Board (CGSB):
http://www.pwgsc.gc.ca/cgsb/
CSA International:
http://www.csa-international.org
Underwriters' Laboratories of Canada (ULC):
http://www.ulc.ca/

Certifying products

Certification organizations help to ensure product safety and enable Canadians to sell their goods around the world

You've taken pains to ensure that your new product meets all applicable standards in the markets where you plan to sell it. But how do you convince your customers of that, or the regulators who will decide whether you may sell your product?

If you are selling a product or service based on a standard, chances are a Canadian certification organization (CO) can help you demonstrate that it meets the requirements of major markets in Canada and around the world.

While most standards are voluntary, manufacturers can rarely afford to ignore them. In many markets, compliance with a standard is an essential tool for marketing to safety- and quality-conscious purchasers. For some products, compliance may also be a legal requirement.

Certification is the process of ongoing, independent, third-party evaluation to determine that a product or system meets the requirements of applicable standards. Manufacturers whose products meet applicable requirements enter into an agreement with a CO to display its certification mark on their products.

Consumers, regulators and manufacturers all benefit from the presence of this mark. Government authorities often incorporate standards into their regulations. For them, certification offers assurance of compliance with these regulatory requirements. Consumers and end users have increased confidence that they are protected against safety hazards, and manufacturers are able to foster a credible image in the marketplace.

Just as a manufacturer's claims of standards conformity can be backed up by a certification mark, the certification mark can be backed up by a CO's accreditation. The Standards Council of Canada has accredited 19 COs to perform certification in a variety of subject areas.

COs evaluate products through a formal system that may include such activities as examination of a product sample, testing, periodic follow-up visits to manufacturing facilities, and auditing of a facility's quality system. A large CO may visit thousands of factories every year to check ongoing production and ensure that the product continues to meet the applicable requirements.

While the certification process varies, a typical process might include:

- the manufacturer's application, in which the manufacturer describes the product to be certified and lists all factory sites;
- a meeting with the CO to discuss and choose certification options, which may depend on the manufacturer's ability to assume responsibility for some or all of the testing;
- an outline of the testing and evaluation required; and
- a time and cost estimate for the service.

COs can help clients meet the requirements of both domestic and foreign markets. Some COs, for example, have established co-operative agreements with their foreign counterparts, allowing them to conduct the testing required by foreign regulators here in Canada. These agreements and partnerships are designed to streamline the time and cost of obtaining product certification for multiple markets.

The Standards Council is also helping Canadians reach the global market by establishing recognition agreements with its own foreign counterparts. These usually involve mutual recognition of accreditation programs, allowing one jurisdiction to recognize certifications performed in another. In the long run, manufacturers and standards organizations hope to develop a single certification system that is recognized and accepted worldwide.

For more information about Standards Council accredited COs, including searchable listings of their specialty areas, visit the Standards Council's Web site at http://www.scc.ca.

ISO 9000 and 14000 registration

Management systems registrars give Canadian businesses a passport to the global marketplace

When you go calling on a prospective new customer, you are really asking that company to take a leap of faith. You need them to be comfortable that your company will live up to its contractual arrangements and supply reliable products or services. You may also want them to have confidence that you won't cause undue harm to the environment in the process.

An increasing number of firms are providing that kind of assurance by developing and registering an ISO 9000 quality management system (QMS) or ISO 14000 environmental management system (EMS). Non-commercial organizations have also begun to implement these standards.

A management system documents a company's systems, policies, procedures and practices. Registration provides an objective third-party assessment that the management system has all of the necessary components, as described in international standards, and that it is being consistently applied.

Steps towards registration typically include:

- development of a QMS or EMS manual by the organization;
- on-site auditing by the registrar;
- correction of areas of non-conformity by the company; and
- verification by the registrar.

Registrars issue certificates as written assurance of a company's conformity with the relevant management system standard. Periodic surveillance audits are performed to maintain the registration. Approximately every third year, a reassessment is performed to ensure the overall effectiveness of the company's management system.

The credibility of registrars is crucial to the value of registration. When purchasers trust the results of third-party registration, suppliers do not need to undergo time-consuming management system audits by individual customers. When a registration certificate is recognized in other countries, the time and expense of additional audits or re-registration are avoided.

To foster credibility, the Standards Council of Canada accredits both QMS and EMS registrars, as well as certification and training organizations for the auditors who are an important part of the registration process. To date, 15 QMS registrars and 6 EMS registrars have been accredited.

In some industries, however, an ordinary registration certificate isn't enough. The automotive, telecommunications, aeronautics, medical devices and forestry industries have all developed their own sector-specific extensions to ISO 9000 and ISO 14000. The Standards Council and its partners are developing programs that will allow registrars to provide registration in these areas as well.

The Standards Council is helping to secure foreign recognition of Canadian accreditations and registrations by participating in the development of multilateral agreements through organizations such as the International Accreditation Forum (IAF) and the Pacific Accreditation Cooperation (PAC). Through these agreements, bodies from around the world agree to recognize one another's accreditations. The Standards Council has also negotiated a bilateral mutual recognition agreement with the United States accreditation body, ANSI/RAB.

For details on accredited QMS and EMS registrars, and on international recognition agreements, please visit the Standards Council's Web site at http://www.scc.ca.

Auditing the auditors

In addition to accrediting QMS and EMS registrars, the Standards Council of Canada also accredits organizations that provide training to or certify QMS and EMS auditors. Auditors are the people who assess an organization's management system to determine that it conforms to the requirements of the applicable standards.

Accreditation ensures that auditor credentials are beyond reproach, and that training specifications, instructors and course materials are appropriate and of high quality.

Testing and calibration

Laboratories put products and materials to the standards test

According to an old adage, the proof of a pudding is in the eating. While a simple taste test may be sufficient for most pudding consumers, modern products – and substances such as air, water, soil and minerals – usually require more rigorous evaluation. Calibration and testing laboratories provide this "proof of the pudding" by calibrating measuring equipment or conducting tests to the requirements of applicable standards.

Canada's National Standards System (NSS) includes more than 225 calibration and testing laboratories, as well as a variety of organizations that assess their competence or rely on their services. By working together, the NSS not only ensures that Canadian businesses can offer their services to Canadian and international markets, it also helps to safeguard the health and safety of Canadians.

Testing the testers

The NSS includes both large and small laboratories. A few are accredited for just one test procedure, while the largest are accredited for more than 1,200. Some are in-house testing facilities for large companies or certification organizations, while others offer their services to the public.

Regardless of size, these labs all became part of the NSS in the same way: by being accredited by the Standards Council of Canada's Program for Accreditation of Laboratories – Canada (PALCAN). Accreditation is an assessment of a laboratory's facilities and competence against internationally recognized requirements developed by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).

Besides meeting these general requirements, laboratories must also demonstrate their competence to perform specific tests or groups of tests. The Standards Council's accreditation program covers a wide variety of specialty areas, including environmental analysis, forensic testing, information technology, agriculture and food, and mineral analysis.

A number of private- and public-sector organizations take part in the accreditation process, either by providing technical expertise or by operating joint programs with the Standards Council. For example, the Standards Council and the Canadian Association for Environmental Analytical Laboratories (CAEAL) operate a program for environmental laboratories.

This collaborative approach benefits everyone involved. Accreditation allows laboratories to demonstrate their competence without having to be evaluated by every potential new client. Since accreditation in a variety of subject areas is provided by one body, labs can also expand their accreditation without having to undergo another full evaluation every time.

Clients are assured that the lab they choose will produce consistent, reliable results without having to judge the lab's competence themselves. And since the program is based on international criteria, backed up by the Standards Council's recognition agreements with laboratory accreditation bodies in other countries, clients have a better chance of having their results accepted overseas.

The general public also benefits. A number of public-sector agencies, including federal government bodies dealing with the environment, food safety and pest control products, are coming to rely on the NSS for testing. This allows governments to scale back their own laboratory facilities while still ensuring reliable, accurate testing in these important areas.

Participants, Beneficiaries and Partners

Conformity Asse

Industry

Industry relies on the standards and conformity assessment services of the NSS to develop and market products globally. Industry's participation helps ensure standards and standards strategies are good for business.

Calibration and testing laboratori

Calibration and testing laborato products and calibrate measurin to verify that they meet the require specific standards.

Consumers and non-governmental organizations (NGOs)

Consumers and NGOs ensure that the NSS takes into account societal concerns, including the environment, health, safety and privacy. Consumers and NGO representatives bring the human element to the development of standards and standards strategies.

Certification organizations

Certification organizations provide ongoing, independent, third-party evaluation to determine that a product meets the requirements of applicable standards. Certified products usually display a certification mark.

Registration organizations

Management system standards like the ISO 9000 and ISO 14000 series help organizations produce consistent quality or address environmental impact. Registration organizations provide objective, third-party assessment that a management system has all of the necessary components and that it is being consistently applied.

Governments

Governments rely on the NSS to help them negotiate trade agreements and as part of the regulatory system. Government participation ensures that the NSS supports trade and public policy.

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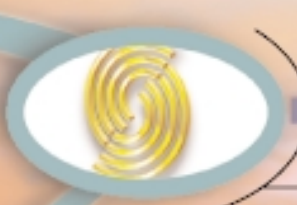
national **standards** system

The National Standards System is Canada's network of people and organizations involved in the development, promotion and implementation of standards. Through the collaborative effort of the System's members, Canada's standards help advance the social and economic well being of the country and safeguard the health and safety of Canadians.

Overseen by the Standards Council of Canada, the National Standards System consists of over 270 organizations and 15,000 volunteers.



Standards Council of Canada

The Standards Council of Canada oversees the National Standards System. It accredits standardization organizations, verifying that they have the resources, structures and expertise to deliver trustworthy services. The Standards Council approves National Standards of Canada and also represents Canada in key regional and international standardization forums.

International and regional standardization bodies

International and regional standardization bodies work towards the global harmonization of standards to liberalize trade, address common societal issues and safeguard consumers. These bodies also work towards the international acceptance of conformity assessment reports and marks, making it less costly and time consuming to have products approved.

Standards development organizations

Canada's standards development organizations co-ordinate the work of some 15,000 volunteers who develop Canadian standards. Standards development organizations also adopt or adapt international standards for use in Canada.

Auditor trainers and certifiers

Auditor trainers and certifiers train and certify the auditors who determine when an organization meets the requirements of management systems standards such as the ISO 9000 and ISO 14000 series.

A national partnership

Partners in industry, government and non-governmental organizations play a critical role in Canada's National Standards System

The most important component of the National Standards System (NSS) is people. By some estimates, over 15,000 Canadians take part in the development and application of standards.

Bringing that many people together is a remarkable achievement. What's even more remarkable is how the NSS enables participants with diverse and sometimes opposing positions to work together.

Business and industry

Ever since manufacturers established the first standards bodies, business has had an interest in standards. Industrial users still rely on standards to ensure the quality of raw materials, verify that parts and components work together, and meet the expectations of their customers.

But today's standards do much more. Standards are being developed for service industries. They're an important element in international trade. Standards even enable businesses to respond to consumer concerns in areas such as privacy.

Businesses and industry associations contribute to the NSS at a number of levels. They take part in standards development and advisory committees. Industries develop specifications that may become international standards. Associations help to develop and implement accreditation programs.

Industry is also a major client of the NSS, as the main purchaser of the products and services it offers. The revenues provided by business keep the system going.

Governments and regulators

The NSS has long been a part of the Canadian regulatory environment. For example, provincial and territorial electrical codes require products to be certified to Canadian safety standards before they can be sold.

It's not hard to see why standards appeal to regulators wanting to safeguard the public. The development process makes standards technically and financially feasible, compatible with current practices, and acceptable to both producers and users. By referencing existing standards rather than developing new technical regulations, regulators save themselves time, expense and controversy.

Standards are also effective alternatives to regulation. Many industries have adopted standards-based voluntary codes in areas such as environmental protection.

Where regulation is necessary, the NSS can play a role in implementing it cost effectively. Instead of operating their own laboratories, for example, some government departments now rely on Standards Council-accredited labs for testing or calibration.

In order to monitor and have input into standards work, government representatives take part in standards-development committees. The Standards Council also has an advisory committee for provincial and territorial governments, and works closely with a number of departments on accreditation programs and trade agreements.

Non-governmental organizations

As the role of standards in society broadens, so does the range of people with a stake in standards issues. That means an ever bigger role for non-governmental organizations (NGOs) in the NSS.

Some NGOs, such as consumer groups and labor unions, have been part of the NSS for a long time. Others, such as environmental groups or seniors' organizations, are just beginning to get involved.

The changing face of the NGO component brings a whole new dimension to the NSS. While the inclusion of new participants with strong convictions makes achieving a consensus more challenging, it also ensures that this consensus is more reflective of societal values and aspirations.

The NSS is adapting to enable these new groups to take their place as full partners in standardization. Some organizations have advisory panels for specific groups such as consumers or seniors. The Standards Council has established a consumer and public interest advisory committee. And while participation can be a drain on NGO resources, NSS organizations are looking at new sources of funding and new ways of doing their work, such as Internet discussion forums.

Halfway down the stairs

Possible roles for regional standards bodies

This article is adapted from a presentation given by Standards Council of Canada chair Linda Lusby to a special joint session of the Pacific Area Standards Congress (PASC) and the Pan-American Standards Commission (COPANT), which took place in Cartagena, Colombia on April 14, 1999.

When I think about regional standards bodies such as PASC and COPANT, I'm sometimes reminded of a poem by A. A. Milne, the creator of Winnie the Pooh:

Halfway down the stairs

Is a stair

Where I sit.

There isn't any

Other stair

Quite like

It.

I'm not at the bottom,

I'm not at the top;

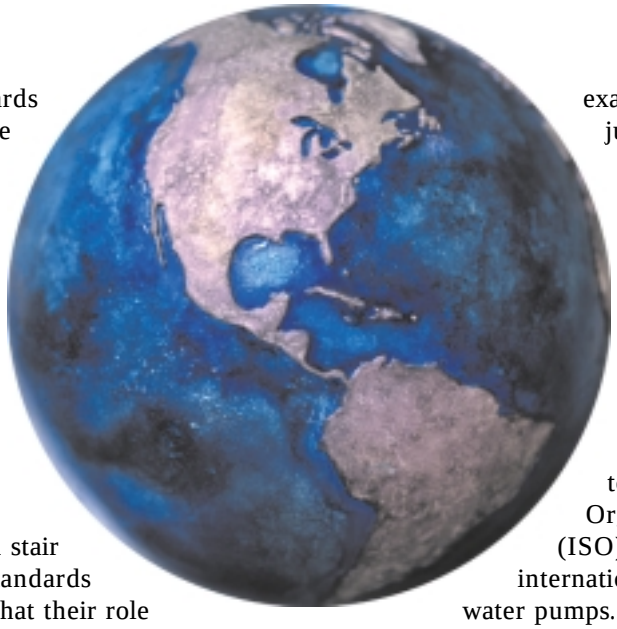
So this is the stair

Where

I always

Stop.

(continued next page)



In some ways, regional standards bodies are "halfway down the stairs". They sit between the national and international bodies, and we're not quite sure how to describe their position. But we've added them to our standards stairs, expecting them to make it easier for us to climb up or down.

Standardization is more complicated than climbing the stairs, however, so it's not always clear just how that halfway-down stair is going to help. Even regional standards bodies don't seem to agree on what their role is. COPANT develops standards, for example, while PASC does not.

What I'd like to do in this article is to present several suggestions on what the role of regional standards bodies could be.

The most successful example of regional standardization is, of course, Europe. The European Union (EU) is well on the way to having a unified regional standards development and conformity assessment system, and there is a lot we can learn from its experience.

At the same time, we should keep in mind that what works in Europe may not necessarily work in other areas. The EU countries enjoy roughly similar levels of economic, social, political and technological development. The same can't be said for the Americas or the Pacific Rim. This greater diversity presents different challenges, and different opportunities, for standards bodies in these regions.

One role that regional standards bodies already fulfil admirably is serving as a forum for sharing information and experiences. In fact, that was the theme of PASC and COPANT's special joint session in April 1999: "Bringing together experiences to improve." By bringing together developed and developing countries, regional bodies can help the latter to build up their standards development and conformity assessment infrastructures. Canada, for example, has helped Trinidad and Guatemala with the development of their WTO/NAFTA Enquiry Points.

Along the same lines, regional bodies could play a role in adapting international standards to local conditions. While this is usually regarded as the job of national bodies, regional body members often share a language or common technical practices. Doing this adoption at the regional level could save effort and expense, and might even make international standards available to countries that don't have the resources to adopt them on their own. If several Spanish-speaking countries want to adopt an international standard, for example, why not have it translated just once rather than several times?

Regional bodies may also need to develop regional standards. It can sometimes be difficult to generate interest or support at the international level for a standard that satisfies a regional need. For example, it took some time for developing countries to persuade the International Organization for Standardization (ISO) to begin development of an international standard for hand-operated water pumps. Perhaps a regional standards-development body would have acted more quickly.

Regional standards can also serve as an intermediate step to harmonization with international standards. Canada, the U.S. and Mexico, for example, have had some success in the development of trinational electrical product standards.

The idea here is not, of course, to develop regional standards that are incompatible with the rest of the world. Instead, regional standards development could become part of the international process. We've seen this happen in a formal way in the relationship between ISO, IEC, the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC), in which the European bodies develop a document that becomes both the European and the international standard. Once they have a proven track record, other regional standards bodies could be accorded the same privilege.

In a similar manner, regional bodies could also serve as the place where new concepts in standardization are developed and "field-tested" prior to implementation at the international level. For example, a number of countries, including Canada, have developed standards-based privacy codes. While ISO members have decided not to begin international work at the moment, the successful application of these codes at the national level may lead to greater support for ISO activity in the future. Implementing new standards at the regional rather than the national level could provide even more impetus for their eventual international adoption by demonstrating their effectiveness under a wider variety of conditions.

Where I believe regional standards bodies have the greatest potential, however, is in their ability to serve as stepping-stones to international standards bodies.

Regional bodies may be able to help individual countries take part in international initiatives. For example, the Pacific Accreditation Cooperation (PAC), an organization of accreditation bodies from the Pacific Rim, has

signed a multilateral agreement on the recognition of accredited ISO 9000 registrars developed by the International Accreditation Forum (IAF). That gives PAC members the benefits of membership in the IAF agreement, without the expense of participating in an international forum.

Regional bodies may also increase the influence of people and organizations that don't get to take part in international standards development. One of the most vexing problems for international standards bodies is the issue of balance on standards committees. Multinational companies play a large role in ISO and IEC, while the role of small businesses, governments, non-governmental organizations and consumers is often limited due to the cost of participation.

Regional bodies may help to resolve this problem. The Standards Council of Canada has found that bilateral or regional bodies are often more accessible for small businesses and regulators than international bodies. When we looked at who participated in which committees, we found that small and medium sized businesses provide one out of every four Canadian members of Canada-U.S. standards development committees, compared to one in ten at the international level.

Developing countries are often as disadvantaged as small businesses or consumers when it comes to taking part in international activity. These countries often lack the influence to make their voices heard in international forums — that's if they have the resources to participate at all. Regional standards bodies may provide a solution: one vote among 24 carries more weight than one among more than a hundred, and the plane fare from, say, Bolivia to Colombia is a lot less than the fare to Geneva.

Effective regional representation at the international level might relieve some countries of the effort and expense of international participation altogether. If you know that your regional body is going to present your concerns to ISO or IEC, perhaps with more influence than you could, there may be better ways to allocate your limited resources.

The opportunities for strategic action and coordination don't end with the presentation of a united front, however. Regional bodies could also coordinate the allocation of international chairs or secretariats within the region, support members' bids for leadership positions, share the resources necessary to operate a secretariat, or perhaps even hold secretariats themselves.

In time, perhaps ISO and IEC will become federations of regions rather than of individual countries.

How can we further explore these ideas?

Both Canada and the United States are currently in the process of developing national standards strategies — documents that will serve as standardization roadmaps for the 21st century. As part of this process, participants are intently examining the Standards Council of Canada's role as Canada's national standards body, and the roles of all other participants in our National Standards System.

It's a pretty demanding exercise, but one from which we expect to emerge as a much more focused and coordinated national system. Perhaps we should consider a regional standards strategy as well.

Halfway down the stairs can be a good place to sit, once you know why you're there.

Promoting international trade

The Standards Council and NSS work with Canadian governments to advance trade objectives

Though its name implies a national focus, the onset of economic globalization and the unprecedented growth of trade have given the National Standards System (NSS) a decidedly international focus.

Increasingly, Canadians are feeling the impact that standards, regulations and conformity assessment practices have on trade – and they are looking to the NSS to develop associated strategies.

The Standards Council is a key player in voluntary international standardization activities through the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). Regionally, the Standards Council is active in the Pan-American Standards Commission (COPANT) and the Pacific Area Standards Congress (PASC).

As Canada's national accreditation body, the Standards Council also participates in international and regional co-operation agreements for conformity assessment. The ultimate goal is to enable Canadian exporters to use a single test, certification or registration to gain market acceptance anywhere in the world. Members of the NSS and other stakeholders work closely with the Standards Council in developing policy advice in this area.

Some of the key regional and international accreditation forums include the International Accreditation Forum, Inc. (IAF), the International Laboratory Accreditation Cooperation (ILAC), the Pacific Accreditation Cooperation (PAC), the Asia Pacific Laboratory Accreditation Cooperation (APLAC), the North American Calibration Cooperation (NACC) and the International Auditor Training and Certification Association (IATCA). These bodies promote the international acceptance of accreditations related to management systems registration, calibration and testing, product certification, and the training and certification of auditors.

As well, the SCC recognizes the value of providing technology assistance to developing countries interested in building their own accreditation infrastructures. To that end, the SCC plans to join the Inter-American Accreditation Cooperation (IAAC), the regional body representing all the Americas.

The Canadian Standards Strategy (please see page 6) calls for the Standards Council to become more formally involved in government-led international and regional trade initiatives such as the North American Free Trade Agreement (NAFTA), the Free Trade Area of the Americas (FTAA) and the Asia-Pacific Economic Cooperation (APEC). The goal is to ensure coordination between trade, regulatory and standards initiatives.

The Standards Council assists the Department of Foreign Affairs and International Trade in formulating Canadian policy positions on standards issues in the World Trade Organization (WTO), the key body where international trade rules are established. WTO obligations concerning standards-related measures are embodied in the Agreement on Technical Barriers to Trade (TBT). The Standards Council has accepted the TBT *Code of Good Practice for the Preparation, Adoption and Application of Standards* – a code aimed at promoting transparency in the development of standards and minimizing the potential for standards to become obstacles to trade. Furthermore, the SCC has adopted ISO/IEC Guide 59, the code of good practice for standardization, and is looking at code of good practice principles in conformity assessment.

The Standards Council has also contributed to bilateral government-to-government mutual recognition agreements (MRAs) for conformity assessment. MRAs benefit both industry and consumers by reducing the costs of repeated testing. The Standards Council is currently managing implementation of the electrical safety annex of MRAs with the European Union, Switzerland and the European Free Trade Association (EFTA). Because of the persistence of national requirements for conformity assessment, MRAs are expected to become increasingly important tools for liberalizing trade.

The ultimate success of the Standards Council's work in the international arena will depend on the active involvement and commitment of all members of the NSS.

ISO 9000: Year 2000 editions move a step ahead

The Year 2000 editions of the ISO 9000 series of quality management standards have moved a step closer to implementation. New editions of ISO 9000, 9001 and 9004 were published as draft international standards (DIS) in November. Users now have the opportunity to review the draft standards and submit their comments to ISO member bodies, including the Standards Council of Canada. Another draft is expected in the third quarter of 2000, and a final version before the end of the year.

ISO and its partners are also taking steps to ensure a smooth transition to the Year 2000 editions. The technical committee responsible for ISO 9000 (ISO TC 176), ISO's committee on conformity assessment (CASCO) and the International Accreditation Forum (IAF) have established a joint working group to manage their introduction.

At a September meeting in Vienna, the group agreed on five key points.

- Registration bodies will not be able to issue accredited registrations to the Year 2000 edition of ISO 9001 until the final version has been published.
- However, registrars will be able to conduct assessments on the basis of the latest draft. In fact, doing so as part of the regular audit process may reduce costs for registered organizations.
- Once the final versions are published, registration certificates based on the 1994 editions will be valid for up to three years.
- Accreditation bodies such as the Standards Council will pay special attention to registrars' ability to manage the transition to the new editions.
- Since the new ISO 9001 replaces three previous standards, registrars will need to make sure that an organization's registration certificate clearly indicates which of its activities are and are not covered.

The drafts are now available from Global Info Centre Canada (please see the notice on page 20). For more on the Year 2000 versions, please see our March/April 1999 issue.

Accreditation program will help forests and forest industry

The Standards Council of Canada has launched a new accreditation initiative that will contribute to sustainable forest management (SFM) in Canada. It now accredits Environmental Management Systems (EMS) registrars to register forestry companies that conform to a Canadian SFM standard.

The standard, which describes the requirements for an ISO 14000-style SFM system, is published by CSA International (please see our November 1996 issue). It was developed by a consensus of stakeholders, including the forest industry, woodlot owners, scientists, technical experts, and aboriginal and environmental organizations.

The new accreditation initiative is an extension to the Standards Council's existing EMS registrar accreditation program. It will verify that registrars operating in the SFM field possess the necessary capabilities, resources, programs and systems.

Companies interested in obtaining SFM registration can identify accredited registrars on the Standards Council's Web site at http://www.scc.ca.

New auto industry requirements for calibration labs

Calibration laboratories that work with the automotive industry have less than a year to comply with new quality system requirements. The new specifications require the labs to be accredited by a recognized accreditation body, such as the Standards Council of Canada.

The requirements are a result of QS-9000, a supplier quality standard for automobile manufacturers based on the ISO 9000 family of quality management standards. QS-9000 requires calibration and testing laboratories to be accredited to ISO/IEC Guide 25, an international set of laboratory accreditation rules. The accreditation requirement is already in effect for testing laboratories, and for calibration laboratories takes effect on January 1, 2001.

Calibration laboratories, which verify the accuracy of measuring instruments and reference standards, are accredited by the Standards Council's Program for the Accreditation of Laboratories — Canada (PALCAN) through a partnership with the National Research Council of Canada's Calibration Laboratory Assessment Service (CLAS).

Conrad Maheux dies

R. Conrad Maheux, a longtime contributor to the National Standards System (NSS) and recipient of the Standards Council's 1998 Jean P. Carrière Award, has died.

Mr. Maheux received the award in recognition of over 25 years of service and leadership within the NSS in the development and promotion of standards and product safety. For details, please see our September/October 1999 issue.

Mr. Maheux died in October 1999 at the age of 73.

Accreditation and Recognition News

The Standards Council of Canada's accreditation and recognition programs formally acknowledge the competence of organizations to carry out specific standards development and conformity assessment services. This provides a basis for national and international acceptance of products and services.

Standards Council accreditation or recognition is limited to particular scopes or fields of activity. For complete scope and contact information on any organization listed here, or for information on the Standards Council's accreditation and recognition programs, please visit our Web site at http://www.scc.ca or contact our information division.

New accreditations and recognitions

Calibration and testing laboratories

- Electronic Warfare Associates — Canada Ltd., Information Technology Security Evaluation and Test Facility, Ottawa
- Fonderie Générale du Canada, Noranda inc., Lachine, Québec
- Maxxam Analytics Inc., Petrochemical Laboratory, Mississauga, Ontario
- LVM-Fondatec inc., Laval, Québec
- Canadian Food Inspection Agency, Animal Diseases Research Institute, Lethbridge, Alberta
- Health Canada, Health Protection Branch, Product Safety Laboratory, Ottawa, Ontario

Good Laboratory Practice (GLP)

- Enviro-Quest, a division of Ag-Quest Inc., Minto, Manitoba

Voluntary withdrawal of accreditation

Calibration and testing laboratories

- Maxxam Analytics Inc., Niagara Laboratory, Niagara-on-the-Lake, Ontario

Notice *of public review*

Canadian OSI Registration Authority (COSIRA)

In accordance with CSA International's *Canadian OSI Registration Procedures and Guidelines* (Z243.110 Series-93), the organizations below have applied for authorization to use the following Open Systems Interconnection (OSI) identifiers.

Company	Object Type	Value
Worldwide Fiber Network Services Ltd.	NSAP	308
TransCanada Pipelines	Object identifier	113557
2 Keys Inc.	X.500	O=2Keys
Labcal Technologies Inc.	X.500 Object identifier	O=Labcal 113558
The Windsor Utilities Commission	Object identifier NSAP	8.1000 309

Correction: An error appeared in one of the OSI identifiers listed in our September/October 1999 issue. The corrected information appears below.

Teranet Land Information Services Inc.	X.500 Object Identifier	O=Teranet 113556

For details, to comment on this application, or to obtain more information on OSI registration in Canada, please contact the administrator, COSIRA at (819) 956-4848, fax (819) 956-3321, e-mail cosira@pwgsc.gc.ca.

Electronic delivery available

JUST RELEASED...

The Draft International Standard versions of the

ISO 9000 Year 2000 Revisions:

- **ISO/DIS 9000**
- **ISO/DIS 9001**
- **ISO/DIS 9004**

Get hardcopy or electronic copies of these drafts from

Global Info Centre Canada

1-800-267-8220

National Standards of Canada

Since the last issue of *CONSENSUS*, the following standards were approved as National Standards of Canada by the Standards Council of Canada. For information on availability and prices, or to order copies of these standards, please contact the appropriate standards development organizations below. Some documents may be available in only one language.

Canadian General Standards Board (CGSB)

Telephone: (819) 956-0425 or
1-800-665-CGSB) (Canada only)
Fax: (819) 956-5644

CAN-CGSB/ONGC 3.5 Unleaded automotive gasoline

Underwriters' Laboratories of Canada (ULC)

Telephone: (416) 757-3611 or
Fax: (416) 757-8915

CAN-ULC S612 CAN/ULC-S612-99 - Standard for Hose for Flammable and Combustible Liquids
CAN-ULC S620 CAN/ULC-S620-99 - Standard for Hose Nozzle Valves for Flammable and Combustible Liquids
CAN-ULC S633 CAN/ULC-S633-99 - Standard for Flexible Underground Hose Connectors for Flammable and Combustible Liquids
CAN-ULC S634 CAN/ULC-S634-99 - Standard for Hose Swivel Connectors for Flammable and Combustible Liquids
CAN-ULC CEI/IEC 60832-99 Insulating poles (Insulating sticks) and universal tool Attachments (Fittings) for live Working
CAN-ULC D61230-99 Live wire working - Portable equipment for grounding and bonding
CAN-ULC D61278-99 Live working - Guidelines for the development of dielectric testing methods of tools and equipment
CAN-ULC CEI/IEC 60900-99 Hand tools for live working up to 1000 V a.c. and 1500 V d.c.
CAN-ULC CEI/IEC 61236-99 Saddles, Pole clamps (Stick clamps) and accessories for live working
CAN-ULC CEI/IEC 61318-99 Live working - Guidelines for quality assurance plans
CAN-ULC D61243-2-99 Live working - Voltage detectors - Part 2: Resistive type to be used for voltages of 1 kV to 36 kV a.c.

CSA International

Telephone: (416) 747-4044
Fax: (416) 747-2475

CAN-CSA ISO/IEC ISP 10613-10 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 10: Token Ring LAN subnetwork-dependent, media-dependent requirements
CAN-CSA ISO/IEC ISP 10613-11 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 11: Definition of Profile RA51.53, relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and Token Ring LAN networks
CAN-CSA ISO/IEC ISP 10613-12 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 12: Definition of Profile RA53.53, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks
CAN-CSA ISO/IEC ISP 10613-13 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 13: Definition of Profile RA53.54, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and FDDI LAN subnetworks
CAN-CSA ISO/IEC ISP 10613-14 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 14: Definition of Profile RA54.54, relaying the Connectionless-mode Network Service between FDDI LAN subnetworks
CAN-CSA ISO/IEC ISP 10613-15 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 15: Definition of Profile RA53.1111, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access
CAN-CSA ISO/IEC ISP 10613-16 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 16: Definition of Profile RA53.1121, relaying the Connectionless-mode Network Service between Token Ring LAN subnetworks and PSDNs using virtual calls over a digital data circuit/CSDN leased line permanent access
CAN-CSA ISO/IEC ISP 10613-17 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 17: Definition of Profile RA53.1111, relaying the Connectionless-mode Network Service between FDDI LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access
CAN-CSA ISO/IEC ISP 10613-4 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 4: FDDI LAN subnetwork-dependent, media-dependent requirements
CAN-CSA ISO/IEC ISP 10613-6 NSC - IT - International Standardization Profile RA - Relaying the Connectionless-mode Network Service - Part 6: Definition of Profile RA51.54, Relaying the Connectionless-mode Network Service between CSMA/CD LAN subnetworks and FDDI LAN subnetworks
CAN-CSA ISO/IEC ISP 10614-1-99 Information technology - International Standardized Profile RC - X.25 protocol relaying - Part 1: Subnetwork-independent requirements

Please see "National Standards" on page 22

Public review
Notices

Listed below are standards being proposed (p), revised (r), withdrawn (w) or amended (a). Copies are available from the designated accredited standards development organization. Normally there will be a minimum charge for each copy of a document ordered. Please note that these documents are intended for review and comment, not for application.

Canadian General Standards Board (CGSB)

Telephone: (819) 956-0425 or
1-800-665-CGSB (Canada only)
Fax: (819) 956-5644

CAN/CGSB-1.4 Petroleum Spirits Thinner (r)
CAN/CGSB-1.210 Quick Drying Alkyd Primer for Structural Steel (r)
CAN/CGSB-3.0 No. 16.0-95 Sulphur in Diesel Fuel by Energy Dispersive X-Ray Fluorescence Spectrometry (EDXRF) (r)
CAN/CGSB-3.22-97 Aviation Turbine Fuel, Wide Cut Type (a)
CAN/CGSB-3.23-97 Aviation Turbine Fuel, Kerosene Type (a)
CAN/CGSB-3-GP-24c High-Flash Type Aviation Turbine Fuel (a)
CAN/CGSB-4.2 No. 3-M88 Determination of Moisture in Textiles (a)
CAN/CGSB-4.2 No. 6-M89/ISO 7211/2:1984 Textiles — Woven Fabrics — Construction — Methods of Analysis — Part 2: Determination of Number of Threads per Unit Length (a)
CAN/CGSB-4.2 No. 12.1-M90 Tearing Strength — Single-Rip Method (a)
CAN/CGSB-4.2 No. 12.2-95 Tearing Strength — Trapezoid Method (a)
C/CGSB-4.2 No. 14.19** Quantitative Analysis of Fibre Mixtures — Binary Mixtures Containing Nylon — 20% HCl Method (p)
CAN/CGSB-4.2 No. 27.2-94 Flame Resistance — Surface Burning Test (w)
CAN/CGSB-4.2 No. 41-M91 Standard Light Sources for Colour Matching of Textiles (a)
CAN/CGSB-4.2 No. 59.1-M88 Appearance after Repeated Domestic Launderings — Smoothness of Fabrics (a)
C/CGSB-4.2 No. 78** Thermal Protective Performance of Materials for Clothing (p)
CAN/CGSB-29.1 Screen Type Diagnostic X-Ray Film (r)
CAN/CGSB-29.2 Intraoral X-Ray Film (r)
C/CGSB-32.315** Voluntary Labelling of Foods Obtained Through Biotechnology (p)
CAN/CGSB-43.21-M91 Fibreboard Boxes (r)
CAN/CGSB-43.22-92 Corrugated Fibreboard Products (r)
CAN/CGSB-43.33-92 Water Resistant Corrugated Fibreboard Boxes (r)
CAN/CGSB-44.1-92 Vertical Filing Cabinets, Steel (w)
CAN/CGSB-44.2-M89 Lateral Filing Cabinets, Steel (w)
CAN/CGSB-44.17-M89 Stationary Storage Cabinet, Steel (w)
CAN/CGSB-44.40 Steel Clothing Locker (r)
CAN/CGSB-44.117 Table with Folding Metal Legs and Wooden Top (r)
CAN/CGSB-44.118 Floor Type Tobacco, Ash Receiver, Metal or Plastic (r)
CAN/CGSB-72.11-93 Microfilm and Electronic Images as Documentary Evidence (a)
CAN/CGSB-155.1 Firefighters' Protective Clothing for Protection Against Heat and Flame (r)
C/CGSB-177.2** Canadian Wines of Marked Quality (p)
C/CGSB-186.22** Sales and After Service of Microcomputers (p)

"National Standards", from page 21

CAN-CSA ISO/IEC ISP 10614-2-99 Information technology - International Standardized Profile RC - X.25 protocol relaying - Part 2: LAN subnetwork-dependent, media-independent requirements
CAN-CSA ISO/IEC ISP 10614-3-99 Information technology - International Standardized Profile RC - X.25 protocol relaying - Part 3: CSMA/CD LAN subnetwork-dependent, media-independent requirements
CAN-CSA ISO/IEC ISP 10614-4-99 Information technology - International Standardized Profile RC - X.25 protocol relaying - Part 4: PSDN subnetwork-dependent, media-dependent requirements for virtual calls over a permanent access
CAN-CSA ISO/IEC ISP 10614-5 IT - International Standardized profile RC - X.25 Protocol relaying - Part 5: Definition of profile RC51.1111, X.25 protocol relaying between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a PSTN leased line permanent access.
CAN-CSA ISO/IEC ISP 10614-6-99 Information technology - International Standardized Profile RC - X.25 protocol relaying - Part 6: Definition of profile RC51.1121, X.25 protocol relaying between CSMA/CD LAN subnetworks and PSDNs using virtual calls over a digital data circuit/CSDN leased line permanent access
CAN-CSA ISO/IEC ISP 10616-99 Information technology - International Standardized Profile FDI11 - Directory data definitions - Common Directory Use (Normal)
CAN-CSA ISO 14024-99 Environmental labels and declarations - Type I environmental labelling - Principles and procedures
CAN-CSA Z264.2-99 Labelling of Drug, Ampoules, Vials, and Prefilled Syringes

For a searchable database of all National Standards of Canada, please visit the Standards Council's Web site at http://www.scc.ca.

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