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Success codes

- **NTUC FairPrice CEO: "International Standards are very important to us."**
- **Fujitsu innovates with ISO standards**



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Code-pendant

Flourishing financial services

Secure message exchange is essential in transactions among financial institutions, their clients and other firms. These parties demand predictable, reliable data for message transfer and transaction processing.

To put this challenge in context, let's consider just one type of transaction – credit card payments – and one financial institution. In 2007, this single card issuer had 20 000 member banks with 1.59 billion cards in circulation generating 59 billion transactions per year, with peaks of more than 6 800 transactions per second. These credit cards are accepted in 170 countries, and annual transaction volume amounts to USD 4.8 trillion.

Without consistent and reliable message exchange, none of this would have been possible. Data components within messages must reflect the complete information needed to process each type of financial transaction accurately. Consistent data content standards are crucial to compare and analyse data, as well as for efficient message transfer and processing.

It would not be an exaggeration to say that robust standards are as important to the financial services industry as banking is to the global economy.

ISO technical committee ISO/TC 68, *Financial services*, addresses both security and data consistency in message exchange. Within ISO/TC 68, subcommittee SC 2, *Security management and general banking operations*, focuses on the standardized protection of financial services transactions. Active work continues in the areas of public key infrastructure (PKI) management and cryptographic algorithms for financial services and security in retail banking.

Developing and establishing codes and identifier-based standards is central to the work of ISO/TC 68. For example, the business identifier code (contained in ISO 9362:2009, *Banking – Banking telecommunication messages – Business identifier code (BIC)*), facilitates automated processing of telecommunication messages in banking and related financial transaction

environment by using codes to identify counterparties to financial transactions.

Another example is the market identifier code (contained in ISO 10383:2003, *Securities and related financial instruments – Codes for exchanges and market identification (MIC)*), that ensures smooth and efficient communication of pertinent trade information. The standard will support regulatory analysis of a bank's exposure, particularly if the revision incorporates “dark pools” (trading volume created by institutional orders that are unavailable to the public).

Secure message exchange is essential in transactions.

The international securities identification numbering system (ISIN) continues to be developed to meet market and regulatory demands. In addition to ensuring smooth, efficient communication of pertinent financial transaction information, ISIN also can support analysis of securities concentration risk. Similar benefits can be derived from the CFI code [contained in ISO 10962:2001, *Securities and related financial instruments – Classification of Financial Instruments (CFI code)*].

Last, but not least, ISO country codes (contained in ISO 3166) have long been a necessary component of financial services – alone and within other ISO standards. Every day, there are millions of operations worldwide in which data is inputted, stored, extracted, or transferred. In all such operations, country codes can save time, space and energy.

Long before the appearance of regulation or reporting requirements, the need for consistent data content reporting was

recognized by standards professionals, reference data experts and compliance specialists. Code/identifier-based standards have received considerable attention from financial services organizations and regulators in the USA and the European Union. Movement toward consistent data content standards, largely based on codes and identifiers, will receive new urgency given pending mandates.

ISO/TC 68 plans to meet this challenge as an opportunity for expanded adoption of its standards. At a 2010 meeting of financial services experts in Tokyo, Japan, ISO/TC 68 resolved to form a dedicated group to assess the strategic direction of its standards used within financial transactions, with the aim of expanding standards for regulatory reporting and adoption. In addition, a workshop on financial services will be held in conjunction with the next ISO/TC 68 plenary to review current and future needs.

While regulatory reform and reporting requirements are key drivers, implementers can derive benefits internally from the consistent collection and resulting aggregation and comparison of like data. It is apparent that standardizing both the means by which data is collected and the content of the data itself will produce maximum benefits to both the producers and users of data. ■



Karla McKenna
Chair of ISO/TC 68, Financial services.

World Health Day 2011

“Antimicrobial resistance: no action today, no cure tomorrow” is the theme of World Health Day (WHD) 2011, organized every year on 7 April by the World Health Organization, which participates as a liaison organization in 61 ISO technical committees.

WHD 2011 looks at combatting drug resistance in an era where we depend on antibiotics, and other antimicrobial medicines to treat conditions that decades ago, or even a few years in the case of HIV/AIDS, would have proved fatal. When antimicrobial resistance occurs, it renders these medicines ineffective. WHD therefore calls for an intensified global commitment to safeguard these medicines for future generations.

Numerous ISO technical committees bring together health practitioners and experts from government, industry and other stakeholders to develop International Standards for facilitating and improving healthcare. Some of the topics addressed include health informatics, laboratory equipment and testing, medical devices and their evaluation, dentistry, sterilization of health care products, implants for surgery, mechanical contraceptives, prosthetics and orthotics, contraceptives and quality management among others.

World Consumers Rights Day

On 15 March 1963, President John F. Kennedy gave an address to the US congress in which he formally addressed the issue of consumer rights. He was the first world leader to do so, and the consumer movement now marks 15 March every year to raise awareness of consumer issues.



In 2011, the theme of World Consumer Rights Day (WCRD) was: “Consumers for fair financial services”. To mark the occasion, Consumers International (CI) sent recommendations to the G20 countries on how they can help, following the countries’ commitment to address the subject at the Seoul Summit in November 2010.

CI is one of ISO’s partners on consumer issues. Their participation in the work of ISO technical committees and in the ISO Committee on consumer policy (ISO/COPOLCO) helps bring the voice of consumers to standardization. In 2010 the subject of the ISO/COPOLCO annual workshop was “Restoring consumer confidence in global financial services – Can standards help?”. ISO is now reviewing the recommendations made.

One of the key subjects in the upcoming 2011 CI congress will be ISO 26000 on social responsibility. CI actively participated in its development together with other consumers stakeholders. Consumer issues are therefore one of the core subjects of the standard.



Creating a global food safety culture

“Creating a global food safety culture” was the theme of the Global Food Safety Conference which took place in London, United Kingdom in February 2011. More than 600 participants from 40 countries attended the event which looked at how to better manage food safety in a global context.

According to the Global Food Safety Initiative (GFSI), organizers of the conference, as networks become more complex and expand globally, it is increasingly difficult for food safety professionals to speak the same language. Broken links in this supply chain can have devastating consequences on businesses. And yet, 50% of mistakes in food safety procedure relate to management culture failures.

A holistic approach to food safety means going further than the usual testing mechanisms and recognizing that a company’s corporate culture has a vital role to play.

Attending the event was ISO Deputy Secretary-General Kevin McKinley, who represents ISO on the GFSI Advisory Council. ISO’s participation couldn’t have been more relevant, since the ISO 22000 series, which includes ISO 22000:2005, *Food safety management systems – Requirements for any organization in the food chain*, and the ISO series of standards on conformity assessment, especially related

to accreditation and certification, make an important contribution to GFSI benchmarked schemes and to promoting a global culture of best practices on food safety.



Guidelines for Multinational Enterprises

A special consultation between delegates from the 42 governments adhering to the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises and stakeholders representing business, trade, NGOs



and other international organizations took place in Paris, France, in December 2010.

The Guidelines are recommendations by governments covering all major areas of business ethics, including corporate steps to obey the law, observe internationally recognized standards and respond to other societal expectations.

Discussions focused on human rights, employment and labour, due diligence, supply chains and procedural provisions, including those relating to the functioning of national contact points.

ISO Deputy Secretary-General Kevin McKinley participated in the event. He says, “ISO



and OECD have a long history of cooperation. Currently, OECD participates in over 25 ISO technical committees and subcommittees in a wide variety of subjects.

OECD is a valuable partner contributing to the worldwide dissemination of the best practice included in International Standards.”

Seah Kian Peng

NTUC FairPrice



Photo: © NTUC FairPrice

Seah Kian Peng is the Chief Executive Officer (Singapore) of NTUC FairPrice Co-operative. He is also a Member of Parliament for Marine Parade Group Representation Constituency, and the Chairman of the Government Parliamentary Committee (GPC) for the Ministry of Community Development, Youth and Sports. Mr. Seah has been with NTUC FairPrice since January 2001. During this period, he has worked with the team to transform FairPrice into a multi-format retailer, and increased its market share and social impact whilst strengthening NTUC FairPrice's brand equity. The current turnover of FairPrice is in excess of SGD (Singaporean Dollar) 2.2 billion, with a staff strength of over 8 000 employees.

Since January 2005, he has been the Vice-President of the Singapore Compact for Corporate Social Responsibility (CSR). In June 2009, he was appointed as the Co-Chair of the Social Enterprise Association of Singapore. In Sept 2005, he was elected member of the International Co-operative Alliance (ICA) Board of Directors, making him the first Singaporean to be on this global board in the 112-year history of ICA. He was re-elected in 2009 for another four-year term. A Colombo Plan scholar, Mr. Seah has attended the Advanced Management Programme at Harvard Business School, and was awarded a Fellow of the Chartered Institute of Marketing.

ISO Focus+: *NTUC FairPrice has grown to become Singapore's largest retailer, with a network of more than 250 outlets. To what key reasons and events do you attribute your success?*

Seah Kian Peng: At FairPrice, our first priority is our social mission which is to moderate the cost of living in Singapore. This is the driving force for our business decisions, and our customers continue coming back to us because they recognize and appreciate this. We always strive to be the first supermarket retailer to drop prices and the last to raise prices where possible.

For example, we recently launched the "Stretch Your Dollar" programme which will run until end May 2011. This includes a 5% and 10% discount on 500 housebrand products until end May. Our FairPrice Housebrand products set benchmark prices and are already at least 10% lower than comparable national brands. Our Housebrands have also won accolades such as the Readers' Digest's Most Trusted Brand.

Over the years, we have continued to build a wide and large footprint of stores all over the island. This is because we want to ensure our stores are easily accessible, making it convenient for our customers as

well as helping them to save on transport. We have catered to various customer segments while retaining our social mission to moderate the cost of living in Singapore. We strive to stay relevant to our customers for example, by evolving with our customers' changing lifestyles and offering a wide

International Standards are very important to us.

range of services and shopping formats. Apart from our FairPrice supermarkets, we have FairPrice Xtra, the hypermarket for family shopping fun, FairPrice Xpress, a collaboration with ExxonMobil targeting drivers and riders, and FairPrice Finest, for the mass affluent who want the finer things in life.

We are also known to take the first step in implementing many industry firsts. For example, we were the first in Singapore to launch a pilot eco-friendly supermarket that incorporates the use of recycled and biodegradable materials for store fixtures, energy-saving equipment and lighting, as well as cutting edge "Green Technology" in 2009. This move was recognized by the

Singapore Retailers' Association when we were awarded the inaugural "Green Retailer of the Year award" in 2010. We were also the first supermarket to introduce bar-code scanning technology in 1991.

ISO Focus+: *How does standardization contribute to the general framework for supporting the whole supply chain, including inventory, package shipping, and tracking to allow NTUC FairPrice seamless integration of your products and services?*

Seah Kian Peng: As a trusted supermarket retailer in Singapore serving our customers for more than 30 years, maintaining high quality standards and adopting best international practices are integral to FairPrice's promise to deliver quality products at best value and service to our customers. From an operational standpoint, standardization translates into higher efficiency, process and product consistency and improved productivity. Our staff is also trained on our operational standards at our dedicated FairPrice Training Institute and this helps them better follow standards and guidelines resulting in enhanced operational efficiency.



As a retailer serving over 350 000 customers everyday, product safety and quality is of paramount importance to FairPrice.



FairPrice was the first in Singapore to launch a pilot eco-friendly supermarket that incorporates the use of recycled and biodegradable materials for store fixtures, energy-saving equipment and lighting, a recycling corner to promote recycling, as well as cutting edge green technology.

ISO Focus+: *NTUC FairPrice makes extensive use of ISO standards, starting with ISO 9001:2000 for quality management. How do you value these management systems standards as components of your corporate management practices worldwide?*

Seah Kian Peng: Customers trust that FairPrice provides safe and quality food. Our brand promise is to deliver quality food at best value and excellent service to our customers. Because of this promise and the large number of customers we serve at our stores every day, we take serious and comprehensive steps to ensure food safety and quality.

Food safety is of paramount importance to FairPrice. As the primary food safety

partner with the Agri-Food and Veterinary Authority of Singapore (AVA), we have established guidelines in place to ensure frozen products are stored beneath the specified load lines in the freezers. Regular audits are conducted at every store to ensure this guideline is in place.

Our food safety and quality management system complies with International Standards such as HACCP and ISO 9001 certification. These systems cover our supermarket outlets, central butchery and warehouses.

Being environmentally friendly is also important to us and we launched the first green supermarket at City Square Mall. Our Bring Your Own Bag initiative launched in 2007, has enabled us to save almost 45 million plastic bags. We have also introduced

the reverse vending machine to recycle plastic bottles. A Green Committee was also set up in-house to look into how we can improve environmental management as a whole.

ISO Focus+: *As NTUC FairPrice works for many different sectors and ISO has many relevant committees and technical activities, how do you view the role of International Standards in promoting the services you provide to various sectors and the customer-supplier relationship?*

Seah Kian Peng: International Standards are very important to us. It gives credit to the great lengths that we have gone through to ensure that the end product delivered to all FairPrice customers is both affordable

and of the best quality. It also allows our intermediaries and partners to trust us, and to spur them on to deliver their best.

We recognize that our business partners play an important role in our success. For example, we collaborate with our suppliers and the AVA in ensuring that safety standards are met to ensure that we are able to maintain a high-level of food safety standards throughout the entire supply chain.

There are definitely economic benefits of standardization.

As one of the leading supermarket retailers, FairPrice plays a key role in being an early adopter of standards and through this we spur other industry players to do the same. Many of the standards we were initially involved in during the development stages have now become industry standards.

FairPrice is looking to explore opportunities beyond the domestic market. So this helps to give accreditation in FairPrice's



Photo: © NTUC FairPrice

overseas footprint, retail innovations and operational excellence.

ISO Focus+: What are your views on the new areas and issues calling for international standardization in relation to social responsibility (ISO 26000), business relations and IT services?

Seah Kian Peng: As a social enterprise, social responsibility forms the core of what we do. Giving back to the community has always been part of FairPrice's culture. Indeed, you could say it is part of our DNA. In 2008, we set up the NTUC FairPrice Foundation, to help further FairPrice's philanthropic efforts in a more systematic, focused and sustainable manner. To date, we have given out over USD 20 million through the Foundation to help the poor and needy, to improve workers' welfare and to support community bonding initiatives. As our social mission drives many of our business decisions, it is important for our partners and stakeholders to understand this too.

We also recognize the need for excellent business relations. It is important to have positive and like-minded partners with similar values in order to achieve the best out of this partnership. At FairPrice, we realize that we cannot act independently and have to depend on partnerships in order to offer the best products to the customers in our stores. In 2010, we held our first Partners' Convention to better share our service vision and to reinforce a collaborative approach with our partners. As a retailer, we work very closely with partners upstream and downstream, as we believe these business relations can lead to co-creating an extraordinary customer experience.

IT services are imperative to our business. As industry leaders, we must embrace new technology and open our minds to stay ahead. The ability to innovate and seize opportunities in new technology will be key to driving productivity, especially in the retail sector. IT security standards are also a key area we are looking into. All these help in a better management and control of our entire supply chain including easing our delivery processes.

There are definitely economic benefits of standardization. It is a way to help diffuse and propagate innovation through an industry and ensures that other firms do not fall behind early adopters. We are pleased to play our part and be part of initiatives that help support such efforts. ■

About NTUC FairPrice

NTUC FairPrice Co-operative Ltd was founded by the labour movement in 1973, with a social mission to moderate the cost of living in Singapore. From one supermarket, it has grown to become Singapore's largest retailer, with a network of more than 250 outlets comprising FairPrice supermarkets, FairPrice Finest, FairPrice Xtra, FairPrice Xpress and Cheers convenience stores. NTUC FairPrice also owns a Fresh Food Distribution Centre and a centralized warehousing and distribution company.

Today, with its multiple retail formats serving the varied needs and interests of people from all walks of life, NTUC FairPrice has kept pace with the changing needs of its customers while remaining committed to its social mission and its aspiration to be Singapore's leading world-class retailer with a heart.

For more information on NTUC FairPrice, www.fairprice.com.sg.



Photo: © NTUC FairPrice

FairPrice depends on an efficient logistics chain to ensure fresh, quality products are delivered on time to its stores to meet the needs of its customers everyday.

A coded world

Saving time, space and energy

by Elizabeth Gasiorowski-Denis

Coding systems are among the most frequently used systems for standardization by government, business and the general public at large. Every day, codes are used in millions of operations and items worldwide, in domains that range from books and passports to freight containers and money transfers.

A two-character code like TF for the French Southern Territories saves time (and therefore money) during data entry, reducing the number of keystrokes for input from 25 to 2. Data storage requirements are also reduced proportionally. Codes also reduce error rates during data entry and retrieval, establishing unambiguous and consistent representations for people, places, or things that may go by different names or spellings.* In all cases, these codes save time, space, and energy.

Consider ISO 3166-1, the ISO standard for country codes. ISO 3166-1 is one of the most widely used standards because all national postal organizations throughout the world exchange international mail in containers bearing its country codes for identification. In machine-readable passports, the three-letter code taken from ISO 3166-1 is used to determine the nationality of the user (indicated in ISO/IEC 7501-1). In addition, the Internet domain name systems use ISO 3166-1 alpha-2 codes to define country-coded top-level domains (ccTLDs), e.g. France as “.fr”; Australia as “.au”; Brazil as “.br”, or Japan as “.jp”.

The April 2011 *ISO Focus+* special report looks at ISO 3166 and its applications in dozens of sectors, as well as the many other ISO standards where “success codes” are making an important impact.

The International Standard Book Number (ISBN), for example, is one of the most widely used and successful identifiers around the world, with billions of ISBNs assigned by more than a million publishers in over 200 countries. ISBN is the essential enabler of book trade systems, facilitating the compilation of product databases, electronic data interchange transactions and the collection of sales data.

The Business Identifier Code (BIC) and the International Bank Account Number

(IBAN) are indispensable standards in the financial world, after more than 20 years of implementation. Thanks to BIC, which identifies financial and non-financial institutions, and IBAN, which identifies customer bank accounts, fewer errors are made while routing financial transactions.

The financial industry is now looking towards developing a standard to identify legal entities engaged in financial transactions. Such a standard would bring clear benefits, including additional transparency and regulation to financial markets.

Every shipping container in the world must be registered with the identification code (BIC code) of the container’s owners and operators. The BIC code is used in 115 countries by about 1 700 owners or operators representing more than 90 % of the world container fleet.

The code facilitates international movement and temporary admission for customs purposes, as well as the control of containers, manually or automatically by computerized and/or remote control systems at any stage of the transportation chain and especially in intermodal transport.

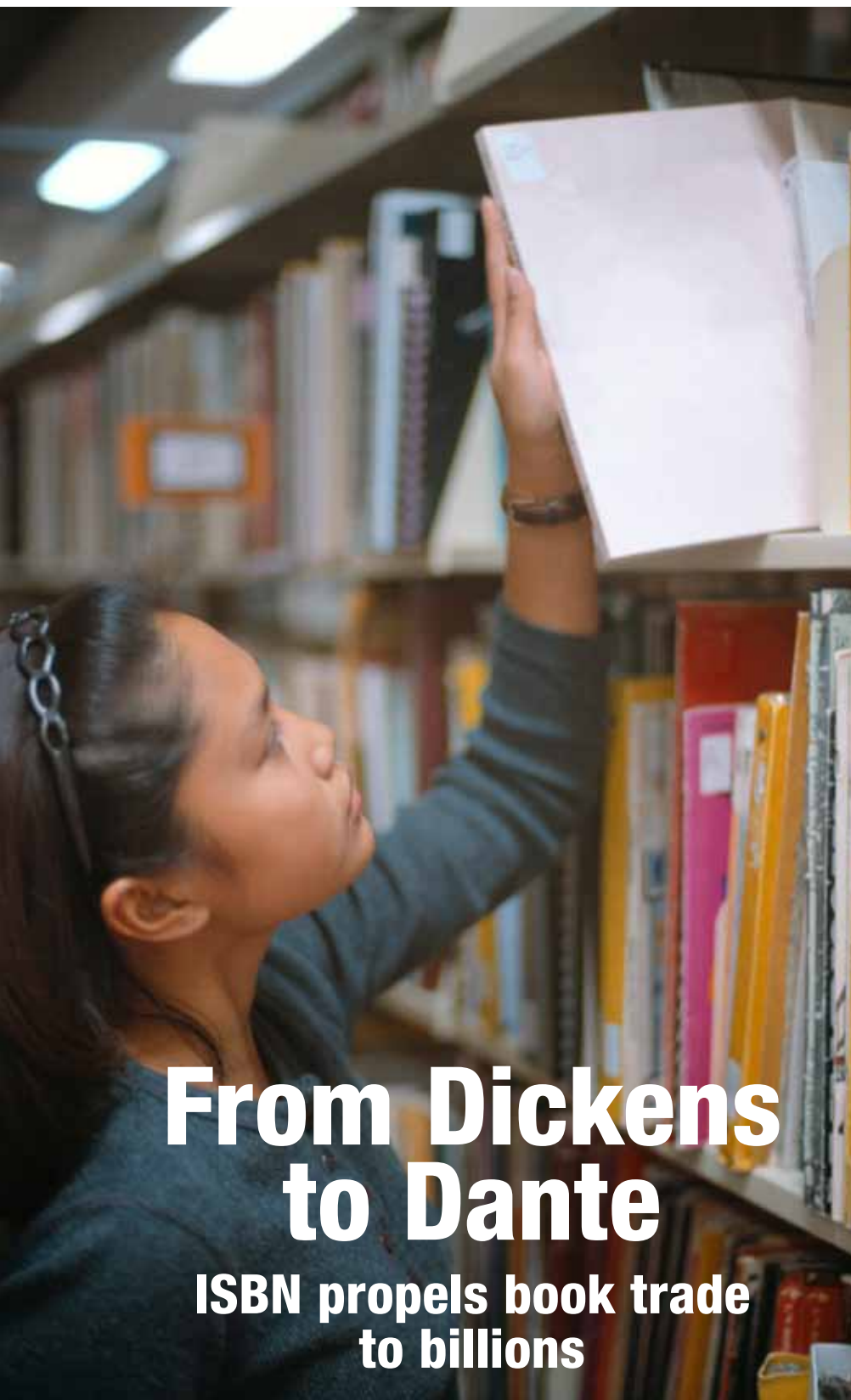
The global automotive industry is yet another sector using a comprehensive numbering system, called the Vehicle Identification Number (VIN), that uniquely describes a vehicle. This number provides a coded description of the vehicle including elements such as the manufacturer, the year of production, the place of production and vehicle characteristics. There are vehicle history services in several countries that can help potential car owners use VINs to find duds and branded vehicles.

And there are many other ISO success code standards! The April 2011 *ISO Focus+* special report provides a taste of the usefulness and benefits of some of the most well-known ISO success codes. ■

Elizabeth Gasiorowski-Denis is Editor,
ISO Focus+.

* *Standards for Archival Description: A Handbook*, “Chapter 7: Codes”.

Compiled by Victoria Irons Walch with contributions by Marion Matters.



From Dickens to Dante

ISBN propels book trade to billions

by Stella Griffiths

An ISO standard since 1970, the International Standard Book Number (ISBN) is one of the most used and successful identifiers worldwide, with billions of ISBNs assigned by more than a million publishers in over 200 countries.

Contained in ISO 2108:2005, *Information and documentation – International Standard Book Number*, ISBN is the essential enabler of book trade systems, facilitating the compilation of product databases, electronic data interchange transactions, and the collection of sales data. Thanks to an agreement between ISBN, GS1 (at the time called EAN International) and the Uniform Code Council (UCC) that allowed ISBN to be encoded into an EAN-13 bar code it also has a critical role in EPos systems.

Even as late as the 1960s, ordering or selling books was a much more confusing and time-consuming process than it is now. There was no commonly accepted approach that publishers could use to identify their publications, and every bookseller had a different way of ordering books. Without an industry-accepted identifier, booksellers had a difficult job clarifying exactly which edition of a book they wanted.

Amid all the different versions of each of the plays of Shakespeare, or of the novels of Dickens, or even of just a single text such as Dante's *Divine Comedy*, multiple pieces of information had to be quoted and verified to make sure that the bookseller received the correct edition. Publishers and distributors were faced with a problem – how to introduce necessary automation into their order processing and inventory control systems so that they could improve efficiency and profitability, and avoid having to identify items one-by-one.

Adapting to changes

In the United Kingdom (UK), a prototype (nine-digit) numbering system that included a final validation character quickly gained acceptance from 1967. Noting this, ISO technical committee ISO/TC 46, *Information and documentation*, established a working group to investigate the feasibility of adapting the UK system for international use.

Following review and approval by the technical committee, ISBN (based on the original UK system, but now a 10-digit identifier) was approved as an International Standard in 1970. The scope and field of application was defined as, “*the use of book numbers so that an international standard book number identifies one title, or edition of a title, from one specific publisher, and is unique to that title or edition.*” (ISO 2108:1972)

It has never been a formal condition that ISBN only be applied to publications made available for sale. In fact, ISBN was

the ISBN system worldwide, including designing and allocating the group identifiers for local ISBN agencies, which in turn dictate the ISBN prefix ranges that will be available to assign to publishers. It is these local ISBN agencies – generally operating on a national basis in a particular country – that are really at the heart of ISBN’s implementation success.

Local agencies assign ISBN prefixes with the appropriate range of individual ISBNs for each publisher’s anticipated output, collect and maintain registration details for each publisher and also receive information

on each publication that is allocated an ISBN. The ISBN agencies promote the use of ISBN in their countries (including by compiling books in print databases) and are also the source of advice and guidance on ISBN application and implementation for publishers.

As a “mature” ISO standard, ISBN has longevity on its side and has steadily been adopted across the world. More than 160 ISBN agencies serving more than 200 countries and territories have collectively assigned more than one million ISBN prefixes to publishers.

The International ISBN Agency still receives requests from time to time from countries that do not yet have local agencies about how to join the system. For developing countries in particular, ISBN is the leveller that gives publishers access to world markets.

From chaos to order

In the early 1970s, ISBN brought order where there was chaos and proprietary, individual solutions. It has since proven to be an identifier that is easy for publishers to implement and for other partners in the supply chain to understand and interpret quickly, accurately and reliably. Digital publications – whether e-book versions of printed publications or multi-media downloadable apps – are still a relatively small percentage of the overall book market, but are growing fast.

ISBN brought order where there was chaos and proprietary, individual solutions.

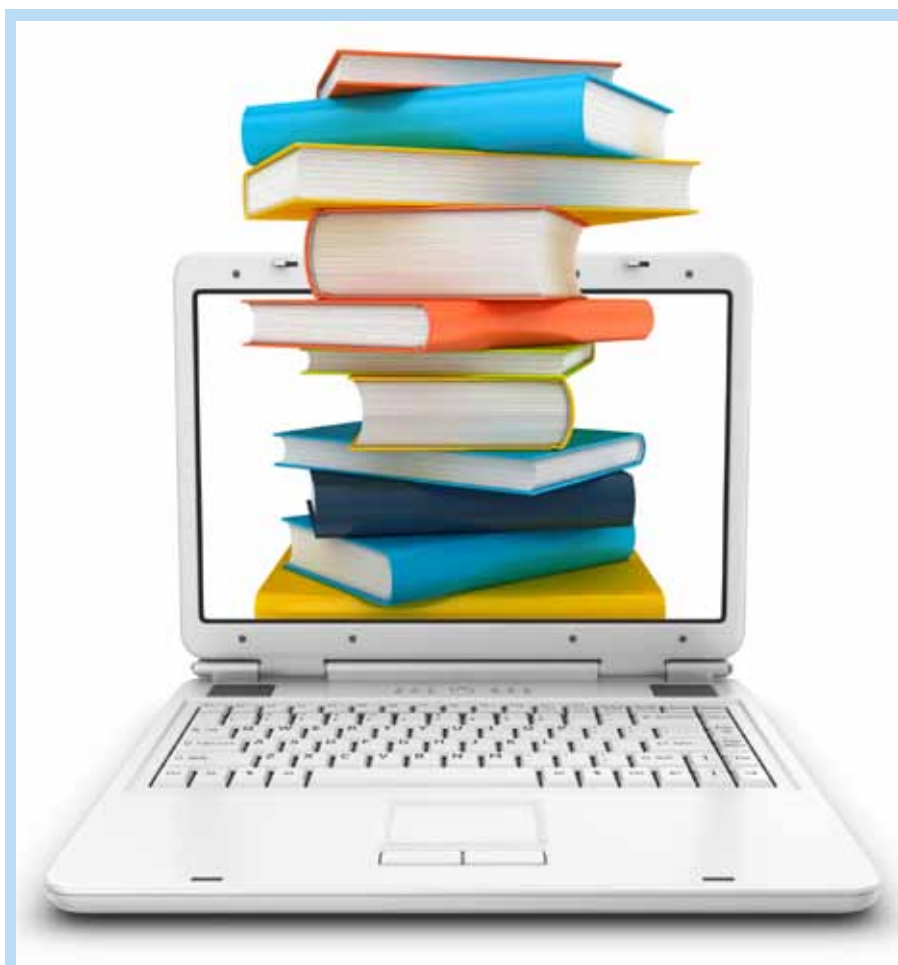
The ISBN system is as capable of identifying each of these different editions as it can denote a hardback from a paperback. For publishers, it is a challenge to remain masters of their own metadata amid the plethora of format and e-reader device opportunities; for ISBN it is to remain as indispensable in the digital paradigm as it has been in the analogue. ■

About the author



Stella Griffiths is Executive Director of the International ISBN Agency. After graduating from the University of Oxford, she has worked in publishing and

International Standards since 1989. She has held senior managerial positions in both the book and serials sectors. While Senior Manager of the United Kingdom’s ISBN Agency, Ms. Griffiths was a lead contributor on ISO/TC 46/SC 9/WG 4 for the revision of the ISBN standard and the transition to the 13-digit ISBN.



Keeping up with the times

An online presence – whether to facilitate the discovery of printed publications or to sell e-books – continues to grow in importance for publishers and retailers alike. The DOI system (ISO 26324, *Information and documentation – Digital object identifier system*) offers a persistent actionable identifier that can be deployed on digital networks.

Some local agencies provide an ISBN-A service (the “actionable ISBN”) whereby an existing ISBN can be expressed in the DOI system.

Users can thereby be directed to a catalogue entry, order the specific publication or even read the book online.



Uncovering systemic risk

Regulators push for global Legal Entity Identifiers

by Paul Janssens

The recent financial crisis has underscored the need for additional transparency and regulation in financial markets. Globally, regulators are conducting systemic risk analyses aimed at understanding the aggregate risks of entities and their counterparties across asset classes and regions. Precise and accurate identification of legal entities engaged in financial transactions is important to private markets and government regulators alike.

An essential component of enabling regulators to conduct such risk analysis is the creation and maintenance of a global, standard Legal Entity Identifier (LEI), the core record attributes which comprise it, and a utility to support it. In other words, the adoption of a reliable, internationally accepted LEI solution. ISO technical committee ISO/TC 68, *Financial services*, has formed a dedicated group to develop a strategy for identification standards, including legal entity identifiers.

LEIs are not new to the financial services industry. They are used by financial institutions to identify customers and trading partners. This enables them to trade, know their customers and conduct internal risk analysis and stress-testing. Commercial LEI vendors exist, but there is no widely accepted LEI standard in the marketplace. In the absence of a universal system for identifying the legal entities that participate in financial markets, private firms and regulators have created a variety of identifiers.

Most financial firms have developed their own LEI solutions in-house, an approach that creates inefficiencies. Tracking counterparties and calculating exposures across multiple data systems is complicated and expensive, and it can result in costly errors.

LEI creation should adhere to industry best practices.

Maintaining internal identifier databases and reconciling entity identification with counterparties is expensive. Complete automation of back-office activities remains elusive, in part because of the lack of a universal identifier for legal entities. On occasion, the straight-through processing chain is broken and transactions fail to settle because counterparties have not been properly identified.

Regulatory concerns

Regulators too have taken a specific interest in LEIs. In the USA, the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) created the Office of Financial Research (OFR) with the specific task of collecting large quantities of pricing, position and trading information and analysing it to uncover systemic risks. Other US regulators will need to perform similar tasks.

In Europe, meanwhile, the European Securities Market Authority (ESMA) and the European Systemic Risk Board (ESRB), which held its inaugural meeting in January 2011, have been set up to collect transactions reporting and analyse global systemic risks.

Precise identification of financial firms is necessary to evaluate whether a firm poses a systemic risk. This involves assessment of the relationships among firms operating across a range of markets and financial instruments. In addition, securities regulators must often identify parents and affiliates of broker-dealers manually and by name. Multiple identifiers for participants in securities trading make it difficult to create a consolidated order audit trail.

This means that regulators cannot adequately analyse systemic risk unless a common, widely adopted LEI is established containing basic information that uniquely identifies all the entities involved in reported transactions. Jean-Claude Trichet, President of the ECB and newly appointed Chairman



of the ESRB, recently announced, “The CSDB [Centralized Securities Database of the European System of Central Banks] would be best complemented by a public reference data utility providing standardized information on instruments and entities that would be operated on the basis of an international agreement.”

Initiatives in the USA

In late 2010, the Commodities Futures Trading Commission (CFTC), Securities and Exchange Commission (SEC), Office of Financial Research (OFR) and a consortium of US regulators known as the Linchpin group (the US Treasury Department, the Federal Reserve Board of Governors, the Federal Reserve Bank of New York, the Federal Deposit Insurance Corporation, the Financial Industry Regulatory Authority, and the Securities and Exchange Commission) all issued proposals for public comment that included the LEI concept.

The Office of Financial Research, for example, issued a statement of LEI policy with a request for comment at the end of November 2010, where it declared its preference, through rule-making, to adopt “a universal standard for identifying parties to financial contracts

that is established and implemented by private industry and other relevant stakeholders through a consensus process.”

The Office also believes that participation of International Standard-setting bodies would be beneficial in developing the standard. If an LEI is established to the satisfaction of the Office by 15 July 2011, it plans to issue a regulation mandating its use for data reported to the Office.

A consistent overview of systemic risk will require engagement from the industry.

The Office has also set out what it sees as the main characteristics of an appropriate LEI. It should :

- Be based on a standard developed and maintained via an international “voluntary consensus standards body”. The Office cited ISO in this regard
- Be unique for each legally distinct entity, where each legal entity is assigned only one LEI which cannot be reassigned

- Persist over the life of an entity, regardless of corporate actions or other business or structural changes
- Include minimal information about the entity in the identifier itself
- Accommodate growth in the number of legal entities that need to be identified in the full range of reporting systems, and to potential industry and regulatory innovations
- Be available for all eligible market participants, including, but not limited to, all financial intermediaries, all companies that issue stock or debt listed on an exchange, all companies that trade stock or debt, infrastructure providers, all entities subject to financial regulation, and firms affiliated with such entities
- Not be contractually restricted in use
- Where possible, be compatible with existing systems, work across various platforms, and not conflict with other numbering or identification schemes
- Be readily accessible using secure and open standards
- Be reliable and secure against corruption or misuse

- Be capable of becoming the single International Standard for unique identification of legal entities in the financial sector.

The Office notes that LEIs should be issued by an entity with expertise in implementing standards for the financial sector “organized and operated as a not-for-profit body and have a formally documented governance structure with balanced representation for relevant stakeholders”.

A recent discussion paper issued by the Divisions of Research and Statistics and Monetary Affairs of the Federal Reserve Board, “Creating a linchpin for financial data: toward a universal legal entity identifier”, argues that a universal LEI would likely provide a “public good” in that it could allow cheaper and more efficient analysis for all interested parties.

The paper identifies a number of standards used in industry today to ensure quality and accuracy in identification assignment. Regardless of the methodology selected, it argues, LEI creation should adhere to industry best practices in identification assignment to ensure high quality and accuracy.

Several organizations have expressed an interest in providing a global LEI service for the financial industry. These include Depository Trust & Clearing Corporation (DTCC) and SWIFT, organizations that have cooperated to study and develop an optimal solution to the LEI challenge.



The two industry utilities have proposed to work jointly in creating a LEI service to assign, maintain and distribute new LEI codes. Initially, the focus would be on the US requirements since these regulators appear to be making their decisions first. The partnership could involve additional players as regulatory requirements emerge around the globe.

The wealth of experience that SWIFT has gained in its capacity as Registration

Authority for ISO 9362:2009, *Banking – Banking telecommunication messages – Business identifier code (BIC)*, provides it with a highly informed perspective on the adoption of a universal LEI standard. SWIFT is also the Registration Authority for ISO 10383:2003 *Securities and related financial instruments – Codes for exchanges and market identification (MIC)*, Part 1 and 2 of ISO 13616:2007, *Financial services – International bank account number (IBAN)*, Part 1 and 2 of ISO 15022:1999, *Securities – Scheme for messages (Data Field Dictionary)*, and the six-parts of ISO 20022, *Financial services – UNiversal Financial Industry message scheme*. ■



About the author



Paul Janssens joined SWIFT, the member-owned cooperative supporting standardized financial information, in 1988. He has held

the positions of Group Treasurer and Euro Programme Manager, and is now heading the Legal Entity Identifier initiative.



No doubt

Quick, efficient and secure payment transactions

by Martine Brachet

Financial institutions face steadily growing pressure to process payments quickly and efficiently while maintaining high safety levels. Straight-through-processing is a core requirement today in the financial industry, heavily supported by regulators.

For example, the Payment Services Directive in the European Union (EU 2007/64) – which takes effect on 1 January of 2012 – provides that the maximum execution time for payments within Europe (in euros), is one day after receipt of the payment order.

To make this deadline, it is essential that financial institutions can post payment transactions directly to their customer bank accounts using fully standardized bank and account identifiers.

At the same time, financial institutions must be able to measure their counterparty risk efficiently and put in place appropriate controls to help authorities fight money laundering and terrorism financing.

An unambiguous identifier for financial and non-financial institutions is fundamental to this effort, as is unique identification of customer bank accounts. However, it is necessary that these identifiers are recognized by the market and accepted worldwide to support the financial industry at large.

Unambiguous identification

Twenty years since its implementation, the financial world can no longer live without the Business Identifier Code (BIC: ISO 9362)

as an International Standard for the automatic and unambiguous identification of financial and non-financial institutions, as well as the International Bank Account Number (IBAN: ISO 13616) for customer bank accounts.

Financial institutions must be able to measure their counterparty risk efficiently.

The BIC standard identifies – without ambiguity – a banking counterparty, including its legal and physical location. This allows the ordering customer bank to automatically identify the counterparties and institute controls for counterparty risk and mandatory anti-money laundering regulations, as well as routing transactions to the relevant banking counterparty. The BIC is universally used in all interbank transactions as the single identifier for financial institutions, regardless of domain for payments, treasury deals, trade finance or securities transactions.

In addition, the IBAN standard identifies one – and only one – customer bank account. It provides assurance to ordering customers and their banks that the account structure is technically correct for the country in which it is used. However, the IBAN standard does not guarantee that a customer bank account exists or is still open at the precise moment an IBAN is used, as there is no worldwide central database for IBANs.

Because these standards bring efficiency and security to transaction processing, they are widely used today all along the financial industry's customer value chain. This results in fewer routing errors, thanks largely to BIC and IBAN. A check digit instantly verifies bank account information before sending the operation, and the account holding bank is the only actor that can safely provide the correct BIC and IBAN data to its customer. It is then the responsibility of each customer to provide BIC and IBAN identification to counterparties.

Guaranteed independence

In Europe, BIC and IBAN are mandatory (EU Regulation 924/2009) for Single Euro Payments Area (SEPA) transactions. These two standards now circulate between more than 300 million EU citizens and their counterparties. BIC and IBAN are the only beneficiary customer account identifier and bank routing codes accepted by banks in the EU/EEA area for all intra-Union euro cross-border credit transfers. In practical terms, a bank that receives a SEPA customer payment without BIC and IBAN is entitled to reject the transaction or request additional data before processing it.

ISO's independent status is a key element in maintaining the crucial position held by BIC and IBAN in the financial industry. ■

About the author



Martine Brachet is Head of Interbank Relationships Department at Société Générale Group in Paris, France.



by Dominique Bouveresse

The global automotive industry is yet another sector using a comprehensive coding system, called the Vehicle Identification Number (VIN). The coding system, contained in ISO 3779:2009, *Road vehicles – Vehicle identification number (VIN) – Content and structure*, and ISO 3780:2009, *Road vehicles – World manufacturer identifier (WMI) code*, serves as a frame of reference for establishing the structure of identification numbers for manufactured vehicles.

The VIN is a structured combination of characters (17 in total) assigned to each vehicle by the manufacturer. Its aim is to ensure the unequivocal identification of any vehicle for a period of 30 years, without requiring any other information. The VIN consists of three sections which are clearly specified in ISO 3779: the World Manufacturer Identifier (WMI), the Vehicle Descriptor Section (VDS) and the Vehicle Indicator Section (VIS).

Most VINs are displayed on the nearside (passenger side) of the windscreen. A VIN can be seen from outside the vehicle, and under the bonnet (on the engine, for example). VINs are an excellent way to combat vehicle “cloning”, a scam that has grown at an alarming rate over the last few years.

Cloning is a term used to describe a vehicle that has had its identity changed, usually because it is actually a stolen vehicle.

Manufacturers' marks

The WMI refers to an identification code given to vehicle manufacturer. ISO 3779:2009 defines the manufacturer as a person, firm, or corporation that issues the certificate of conformity or that demonstrates compliance and assumes product liability for a vehicle ready for operation, independently of the location of the assembly plant. The manufacturer is responsible for the uniqueness of the VIN.

The WMI consists of three characters (capital Roman letters or Arabic numerals).

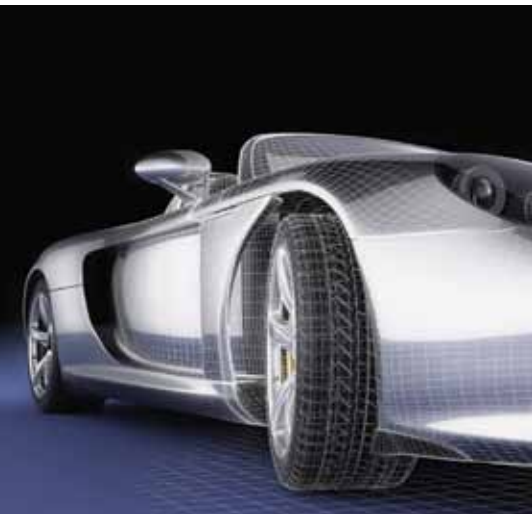
It is assigned by the relevant authority of the country in which the manufacturer has its headquarters in agreement with the SAE International (Society of Automotive Engineers) in the USA. The first character designates a geographic area, the second character designates a country within a specific geographic area, and the third character designates a specific manufacturer.

Detailed description

The second section of the VIN, known as VDS, consists of six characters (alphabetical or numerical) aiming to provide information describing the general attributes of the vehicle. The coding and sequence of this section are determined by the manufacturer. If the manufacturer does not use one or more of these character spaces, the unused spaces shall be filled by alphabetical or numerical characters of the manufacturer's choice.

Proper ID

The third section of the VIN, the VIS, consists of eight characters, the last four being necessarily numerical. When used in combination with the other two sections, WMI and VDS, the VIS ensures the unequivocal identification of a given vehicle. Any unused



position must be filled by a zero in order to obtain the total number of required characters. The first two characters of this section may designate the model year of the vehicle or the calendar year in which it was produced as well as the manufacturing plant.

The manufacturer is responsible for the uniqueness of the VIN.

In some countries, car manufacturers are not allowed to assign a model year (MY + 1) for a vehicle before a specific date that has

been determined by the local authorities of the relevant country. This is the case, for instance, in Argentina, where a MY + 1 cannot be declared before the month of April of each year, and in Turkey, where the authorities have determined the month of August of every year as the mandatory date for declaring an MY change.

ISO 3779 and ISO 3780 both clearly specify the authorized characters. Only Arabic numerals and capital Roman letters can be used, except for the letters I, O and Q. Also, ISO 3779 specifies the Arabic numeral or the chronological Roman letter to be used for each year (1 for 2001 – 9 for 2009, A for 2010 – L for 2020, – Y for 2030).

As regards the VIN display, the VIN printed on documents shall be shown on one line. The VIN as displayed on the vehicle or a manufacturer's plate shall be represented on either one or two lines, without blanks and with no section being split. In the Maghreb countries (Algeria, Morocco and Tunisia), regulations require that specific symbols of each manufacturer should be shown on both sides of the 17-character-VIN.

Relationship with legislation

Throughout the world, both codes are regularly referenced and referred to in the legislation of every country for the type-approval

of vehicles before being marketed. Yet, Venezuela refers to ISO 3779 but also requires a check digit and a production plant code for the ninth and tenth characters of the VIN.

Vehicle identification must be carried out in accordance with both ISO 3779 and ISO 3780.

The check digit for the ninth character is calculated using a formula which is provided for in the Venezuelan legislation and derived from an American standard on the VIN. For such calculation, each VIN character has a value of zero through nine. The tenth character designates the production plant and is at the manufacturer's discretion. However, two production plants cannot be assigned with the same code (letter or figure). This type of 17-character VIN structure is also required in the Gulf countries, China and Mexico.

Brazil, the Gulf countries and Russia do not refer to ISO 3779 for vehicle identification, but to national regulations that are strictly based on ISO 3779, in terms of both form and content.

In summary, both International Standards establish, on a world wide basis, a coding system in order to identify both the vehicle and the vehicle manufacturer. The 17-character VIN is the vehicle "ID", from the date of manufacture to the date of destruction. It is used for technical services (spare parts, after-sale services) but also for administrative (certificate of registration, roadworthiness testing, insurance) and legal purposes (thefts, accidents, litigation). PSA Peugeot Citroen uses extensively these two clear and accurate standards, in Europe and all over the world. ■

About the author



Dominique Bouveresse has been working with PSA Peugeot Citroën for 35 years. He is the international department coordinator responsible

for regulatory, homologation and standardization issues.





Keeping track

Container transport security and safety

by Bertrand Geoffroy

The ability to identify equipment with certainty makes it possible to ensure its operational control, to easily track each shipment, to identify the owner of the equipment, and to properly track inventory as well as the condition of containers and their state of repair and maintenance.

Developing intermodal transport

The *Bureau International des Containers et du Transport Intermodal* (BIC) was established in 1933 to promote the development of intermodal transport. It took the form of a non-profit association under French law, with the support of the International Chamber of Commerce. In the early 1970s, ISO appointed BIC as the international body for the registration and protection of identification codes for container operators compliant with ISO 6346:1995, *Freight containers – Coding, identification and marking*.

Since then, the BIC has actively contributed to the development and improvement of international and regional standards for intermodal systems.

ISO 6346 defines, among other things, the identification marking structure for containers:

- A three-letter prefix, which uniquely identifies the owner or principal operator of the container
- A fourth letter, used as equipment identifier (at present, the standard reserves the letters U for freight containers, Z for trailers and chassis, J for detachable freight-container related equipment)
- A serial number of six Arabic numerals to identify each container
- A check digit providing a means of validating the accuracy of the number entered into information systems. This figure is the result of a somewhat complicated calculation. However, modules can be found on various Websites, and in particular on the BIC Website www.bic-code.org, in order to calculate this figure automatically.

The typical structure of a container number is (where the container operator is BIC):

Operator Prefix	Equipment identifier	Equipment serial number	Check digit
BIC	U	123456	5

That is, **BICU 123456 5**.

It has become common practice to call this three-letter prefix “BIC Code”.

The BIC code is commonly referred to with the letter U, but of course any holder of a BIC code may freely use its prefix with the other letters for identifying equipment – currently limited to Z and J. This list may change according to the needs expressed by the different transport operators.

Registration at the BIC guarantees that the prefix for each operator is unique. On its Website, the BIC makes a permanently updated version of the official register of prefixes available to all stakeholders.

The six-digit number assigned to each container is the decision of each operator. Operators do not have to refer the matter to the BIC. They must simply take care not to assign the same number twice to two different containers. The number of containers that can be operated under a given prefix is simply limited by the range of available numbers (in theory, from 000 000 to 999 999).

The ISO numbering was adopted for all containers in the world, to the exclusion of any other numbering system.

It should be noted that the implementation of a standard is within the discretion of each operator. However, the prosperity of sea containers for the past 40 years is based in part on the successful implementation of standardized marking and on its effectiveness in managing an ever increasing number

of containers, which reached about twenty million units in service in 2010.

One of BIC’s missions is to promote the implementation and raise awareness of the standard among all professionals concerned all over the world.

This mission is fulfilled through participation in various international conferences, major intermodal transport exhibitions on all continents, and numerous working groups within all leading international organizations involved in this field.

Safe and sound

The quality of the container tracking system guarantees seamless transport operations, the accuracy of the information shared for such operations, and the safety needed to keep them running smoothly.

The quality of the container tracking system guarantees seamless transport operations.

Operations safety is associated with the implementation of the International Convention for Safe Containers (CSC 1972) which specifies the conditions for the regular inspection of all containers in order to ensure that they are properly maintained and can thus be used in intermodal transport operations without creating a danger for the personnel who handle them and the residents of the countries they pass through.

The Convention specifies the strength criteria for containers and the inspection procedures:

- A periodic examination scheme: a container must undergo its first

examination not more than five years after the date of manufacture, and, subsequently, at intervals of not more than 30 months

- An approved continuous examination programme (ACEP): this programme requires that the operator of the relevant container fleet should have received approval from an approved authority on the capacity of its organization to implement this programme. Containers operated under its control (owner or lessee) are then expected to undergo regular examinations by experts throughout their operations, and at intervals no greater than 30 months. As a consequence, a formal periodic examination is not required.

The validity of the CSC approval is evidenced by a safety approval plate, known as CSC plate, affixed to the right-hand door of any container, which refers to the standardized identification number of the container.

Aside from the need to monitor and control international trade, as established by the national authorities of all countries, the growing number of safety requirements has reinforced the need for national authorities to be able to identify and track containers and their owners, and led to more stringent instruments governing the movement of containers.

Sea containers

A sea container is a type of equipment used for international trade and, as such, exempt from payment of the various applicable taxes in each country.

Contrary to the so-called domestic equipment used, either within a single country, or





About BIC

The *Bureau International des Containers et du Transport Intermodal* (BIC), with 1 700 members, is the only non-governmental organization linking all groups interested in containerization and intermodal transport: carriers, manufacturers, operators, lessors, shippers, forwarders, etc.

Besides its mandate, given by the ISO and the World Customs Organization, to allocate and protect the ISO alpha code for the identification of containers in international trade, BIC also:

- Contributes to the expansion of containerization and intermodal transport
- Facilitates professional discussions on all subjects connected with containers and intermodal transport
- Obtains and updates specialized documentation for the benefit of its members.

For more information :
www.bic-code.org

from one country to transit through several countries before returning to their point of departure for a new use, and whose transit is carried out under the TIR (international road transport) or similar conventions, sea containers have no point of departure, hence no point of destination. They are used throughout their useful lives from one part of the world to another part, whether loaded with goods to be transported, or empty and repositioned, depending on the needs of international transport. They are not linked to the official place of residence of the operator. It is therefore essential for the authorities of any country to be able to easily identify the operator of a container with certainty.

Two customs conventions govern the use and the movement of full or empty containers as articles of transport equipment, at the international level. They specify the conditions for granting the benefit of free circulation and temporary admission to containers in transit countries, as well as the criteria that must be met by containers in order to be approved for transport under customs seal.

The Customs Convention on Containers (C.C.C. 1972) was the first specific customs convention to have been adopted.

This Convention replaced the Customs Convention on Containers of 1956 which had been adopted before the advent of containers, and therefore did not make provision for the free circulation of such equipment.

So far, 38 countries have ratified the CCC. It has become a reference tool for containerized international transport, even in countries which have not ratified it.

It is essential to easily identify the operator of a container with certainty.

A new convention, the Istanbul Convention on Temporary Admission, was drawn up in the early 1990s and ratified in 1993, in order to replace CCC 1972. It has been ratified by 57 States and it replaces the CCC in the countries where it has been ratified.

Both Conventions share a common Annex specifying that containers must be marked in order to enjoy the particular rights conferred by the Convention. This Annex was amended, respectively in 2008 for the CCC and 2010 for the Istanbul Convention, in order to introduce the regulatory reference to ISO 6346 concerning container identification marks.

Alongside the standard, which specifies a recommended standardized structure for numbering containers, international customs conventions now require the use of this marking to grant the benefit of free circulation and transport under customs seal to containers.

Any container which does not meet these requirements may be stopped by national customs authorities until the situation has been corrected, that is until the container has been marked with an ISO 6346-compliant prefix registered with the BIC and published in the official register. ■

About the author



Bertrand Geoffroy has been BIC's Secretary-General since 2007. He was trained as an officer in the French Merchant Navy. He joined the Logistics Services of CGM

(Compagnie Générale Maritime – a leading French container shipping company) in the 1980s. In 1997 he became the Logistics Director. He subsequently joined the French subsidiary of Hapag Lloyd until 2007, where he was, successively, Director of Operations, Sales Director and Customer Service Director.



Postal services

Country Codes

Bank



Financial services

Currency Codes
Business Identifier Code (BIC)
International Bank Account Number (IBAN)
Personal Identification Number (PIN)
Integrated Circuit Card (ICC)
UNiversal Financial industry message scheme (UNIFI)

KIOSK

Books

ATM

POST

Sold here



Publications

International Standard Book Number (ISBN)
International Standard Serial Number (ISSN)
Language Codes
Codes for the abbreviations of periodicals



Travel documents

Machine Readable Travel Documents (MRTD)



Internet

Country Codes for Top-Level Domain (cc-TLD)
Currency Codes
Language Codes



Coded world

Hundreds of ISO code standards routinely contribute to saving time, space and energy. Below are just a few examples.



Audiovisual

International Standard Audiovisual Number (ISAN)
International Standard Music Number (ISMN)
International Standard Recording Code (ISRC)
International Standard Musical Work Code (ISWC)
ISO Speed Film



Freight containers

Bureau International des Containers et du Transport Intermodal (BIC-Code)
RFID License Plate Tag



Vehicles

Vehicle Identification Number (VIN)
World Manufacturer Identifier (WMI)
Vehicle Descriptor Section (VDS)
Vehicle Indicator Section (VIS)



A global success

ISO country codes

by François Demay

The ISO country codes included in ISO 3166, *Codes for the representation of names of countries and their subdivisions*, is among the most well-known and used of all ISO standards. The standard establishes coded representations of names of countries, dependencies, and other areas of particular geopolitical interest and their subdivisions. Over the years, ISO 3166 has become the most popular and widely implemented standards-based solutions for coding the names of countries.

Key to global trade

ISO 3166 is used in a broad variety of fields of activity – by institutions as well as by private individuals. It consists of three interdependent parts and forms the basis of a coherent system for all types of exchanges (economic, financial, legal, cultural, scientific, etc.) both within and between countries, in combination with the International Standards on:

- Names of languages – ISO 639, *Codes for the representation of names of languages*
- Writing systems – ISO 15924:2004, *Information and documentation – Codes for the representation of names of scripts*
- Currencies – ISO 4217:2008, *Codes for the representation of currencies and funds*.

It is one of the building blocks underpinning globalization and, in particular, communication and exchanges on the Web.

An essential presence

Wikipedia, the most well-known and highly visited online encyclopaedia gives a good estimate of the international penetration of ISO 3166. In Wikipedia, the general presentation of ISO 3166 is available in 36 languages, while Part 1 (ISO 3166-1) relating to country codes is described in 92 languages, Part 2 (ISO 3166-2) relating to country subdivision codes is described in 47 languages, and Part 3 (ISO 3166-3) providing the codes

for formerly used names of countries is available in 15 languages. In addition, all articles on countries or country subdivisions (at least in the English version) display the ISO 3166-1 or ISO 3166-2 codes, in the general information box.

A search on the Web also gives an idea of the number of pages mentioning or introducing this three-part standard. For example, a search on Google (as of 14 March 2011) provided 819 000 results for ISO 3166, 886 000 for ISO 3166-1, 3 720 000 for ISO 3166-2 and 35 000 for ISO 3166-3. By way of comparison, there are 852 000 results on ISO 639, 67 000 on ISO 15924 and 237 000 on ISO 4217.



Scale of the applications of ISO 3166

The acceptance which an International Standard has gained within its potential user community can be seen from the number or scale of its applications. The most well-known applications of ISO 3166 are:

- The Internet Assigned Numbers Authority (IANA) which uses the alpha-2 code (alphabetic 2-character code) to identify the Internet ccTLDs (country code top-level domains) designating all of the domain names assigned to the different countries such as, for instance, “.fr” for France, “.eg” for Egypt or “.jp” for Japan
- The code elements from ISO 4217, which are based on the ISO 3166-1 alpha-2 code; e.g., USD for US dollar, where US comes from ISO 3166-1.
- Passport numbers which use the ISO 3166-1 alpha-3 codes as well as a number of alpha-3 codes which are reserved for identifying the country or the authority issuing a machine-readable passport (see Box [page 25](#)).

Searching the Internet is a good strategy to find many other examples. The following examples encompass a highly diversified range of fields or subject areas from economics to art and culture, through transport and safety, health or international and national organizations. They provide a broader view of the full spectrum of implementations of ISO 3166. Yet, they account for only a small share of the results obtained, and they all relate to a lesser or a greater extent to geolocation features.

From finance to geography

ISO 3166 is widely used in the economic, trade and financial environments.

The ISO 3166-1 coding system is used not only for the representation of currencies, but also for the International Bank Account Number (IBAN) and the universal Bank Identifier Code (BIC, often called SWIFT code, see [page 16](#)).

More generally, it is found in online payment systems such as PayPal, Alertpay.

The GTAP7 (Global Trade Analysis Project), a network of researchers whose mission is to improve the quality of



Travel documents

by Gérard Lang

Among the many applications of ISO standard for country codes ISO 3166, *Codes for the representation of names of countries and their subdivisions*, is that of travel documents.

With the growth and proliferation of international travel, the global community required that travel documents and the information they contain be standardized to speed up and increase security of identification checks. Among this was the data stating a person's origin or nationality.

The three-letter code used by the International Civil Aviation Organization (ICAO) adopted by ISO/IEC 7501-1:2008, *Identification Cards – Machine Readable Travel Documents – Part 1: Machine Readable Passports*, and used by all international machine readable travel documents (MRTD) issuing entities, is intimately linked with the alpha-3 code employed in the first part of ISO 3166-1, Part 1: *Country codes*.

This ICAO code is not a country code per se (nor completely an alpha-3 code), but can be better described as a quasi alpha-3 code for designation of nationality, place of birth or issuing state/authority. The ICAO code comprises four distinct parts, as follows.

Nationality, place of birth, issuing authority

The first part is Part A – *Codes for designation of nationality, place of birth or issuing state/authority*. Part A reproduces the complete list of entries and corresponding alpha-3 code elements specified by ISO 3166-1, with a few exceptions. For instance, ICAO's code for Germany is not the alpha-3 code element "DEU", as in ISO 3166-1, but the alpha-1 code element "D".

For the United Kingdom, where ISO 3166-1 provides the alpha-3 code element "GBR", ICAO's code system includes the following six additional code elements representing the indicated classifications:

- GBR (Citizen)
- GBD (Dependent territories citizen)
- GBN (National [Overseas])
- GBO (Overseas citizen)
- GBP (Protected person)
- GBS (Subject).

The last five codes mentioned in this list have acquired "exceptionally reserved" status in ISO 3166-1.

UN travel documents

The second part is Part B – *Codes for use in United Nations travel documents*. Part B contains three entries, which have no counterparts in ISO 3166-1, but which have also acquired exceptionally reserved status in ISO 3166-1:

- UNO: United Nations organization or one of its officials
- UNA: Specialized agency of the United Nations or one of its officials
- UNK: Resident of Kosovo to whom a travel document has been issued by the United Nations Interim Administrative Mission in Kosovo (UNMIK).

Issuing authorities

The third part of the ICAO codes is Part C – *Codes for issuing authorities*. This part contains the following entries, which have no counterparts in ISO 3166-1:

- XCC: Designates the Caribbean Community (CARICOM)
- XOM: Designates the Sovereign Military Order of Malta or one of its emissaries
- XPO: Designates the International Criminal Police Organisation (INTERPOL).

These code elements may additionally be found in the list of user-reserved code elements in ISO 3166-1.

No defined nationality

The fourth part is Part D – *Codes for persons without a defined nationality*. Once again, Part D contains codes which have no counterpart in ISO 3166-1, but are listed as user-reserved code elements:

- XXA: Stateless person
- XXB: Refugee, as defined in the 1951 Convention Relating to the Status of refugees
- XXC: Refugee, other than as defined under the code XXB
- XXX: Person of unspecified nationality whatever the person's status may be. This category may include a person who is neither Stateless nor a refugee, but who is of unknown nationality and legally residing in the State of issue.

Gérard Lang is Chair of the ISO 3166 Maintenance Agency, and Convenor of ISO/TC 46/WG 2, *Coding of country names and related entities*.

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the quantitative analysis of global economic issues, not only uses the ISO 3166 alpha-3 codes (alphabetic 3-character code) to identify countries and world regions, but also uses a free X code to designate specific parts of the world.

Similarly, the transportation sector, which facilitates the movement and exchange of goods, uses the ISO 3166 codes for different contexts: i.e., sea transport (NAVTEX maritime safety information system, monitoring stations), European road transport (European Union legislation), transportation of dangerous goods, cross-border movements of hazardous waste, etc., including for the labelling of chemical products.

Geography, cartography and geolocation are some of the major sectors using ISO 3166 for the identification of the code elements of some countries, drawing maps with Google tools, or locating areas on an atlas.

Another widespread use of the standard concerns the geofiltering features applied by countries to the videos and players they use, in order to restrict access to content and reading to some geographical areas, as the world is divided in different zones.

Geolocation is also used to identify, record or register places relating to clients, addresses, job announcements, etc.

Supporting art, culture and the media

Art and archaeology use the ISO 3166 codes and conventions for identification and location purposes.

For example, after the creation of a basic index of place names, Afghanistan's archaeological sites have been numbered according to the present-day province where they are located, on the basis of ISO 3166-2.

In France, a 3D architectural model project using augmented reality technology, aiming to reconstitute part of the former buildings of the Cluny Abbey, is based on cutting out a number of components identified by a bar code incorporating the FR-071 (for the Saône-et-Loire administrative division in France) code element from ISO 3166-2.

Many libraries have also based their coding system on ISO 3166. In order to facilitate bibliometric measures, the standardization of document descriptions has been proposed, with the coding of the principal author's country of affiliation based on ISO 3166.

The German National Library (*Deutsche Nationalbibliothek*, DNB) uses ISO 3166 in its standardized descriptors



(*Schlagwortnormdatei*, SWD). The Website of Arabic libraries (*arablibrariannet*), and the ABES French Website (Higher Education Bibliographic Association) with respect to metadata relating to electronic theses (TEF), have adopted ISO 3166 for coding the original country of such documents.

*ISO 3166 is used
in a great variety
of fields of activity.*

In the United Kingdom, libraries (and similar organizations) have an ISIL identifier (International Standard identifier for libraries and related organizations) based on the "MARC organisation code" whose uniqueness is ensured by assigning a country code prefix based on ISO 3166-1.

In the cultural and media sectors, organizations as well as individuals often recommend using the ISO 3166 2 codes to identify countries among the embedded metadata. For example, this type of recommendation is found on the Website of an American agency responsible for archiving audiovisual documents, or on the initiative of a private individual for the management of digital photographic materials.

A Market research on the video-on-demand (VoD) carried out in 24 European countries, displays countries in the sequence of the ISO 3166-1 alpha-2 code elements to maintain neutrality in the classification (Switzerland under CH, United Kingdom under GB).

News agencies often assign ISO 3166 code elements to texts and images. Job offers can be posted on the Internet using

programmes incorporating the ISO 3166-1 and ISO 3166-2 codes.

An ideal system for IT

A significant number of companies or individuals developing software (database management systems for example) have adopted, among all the tools made available to developers, the ISO 3166 code elements used for identifying countries.

For instance, the “boiteaoutils.info” Website whose official aim is “to help IT specialists and students easily cooperate and share multiple resources” gives under a list of “XHTML tags”, the alpha-2 code elements for countries, languages and scripts.

National or governmental organizations extensively use ISO 3166.

Another Website provides – as part of the elements required for software localization – under the “Local class” name, the objects for identifying or changing the country and the language used by the computer running the application.

A number of Websites have a search help feature by location in the form of a menu using the ISO 3166 codes or country names (e.g., the European Commission Website).

In order to further promote the use of the standard, and considering that entities are “only” provided in French and English,

translation programmes are developed (e.g., in Chinese) for the names of said entities, in order to “internationalize” the ISO 3166 entity names.

From a more global perspective, note that ISO 3166 (and the other codes mentioned at the beginning of this article) is included in the basic information provided by the W3C (World Wide Web Consortium) responsible for promoting compatibility between Web technologies as well as by the Dublin Core (a generic metadata schema for describing digital or physical resources and establishing links with other resources), and which is intended to be used in all projects where countries, languages, and scripts play an essential part.

From the United Nations to stamp collecting

Many international organizations recommend or use ISO 3166. Examples include the United Nations, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Universal Postal Union (UPU), the United Nations Economic Commission for Europe (UNECE).

National or governmental organizations, e.g., the US Food and Drug Administration and the US Department of Defense, extensively use ISO 3166 sometimes to replace their national coding system (particularly in the USA, or within the Philippine government).

In the security sector, Interpol (the International Criminal Police Organization)

uses a Destination Agency Identifier (DAI) which includes an Interpol Country Code based on ISO 3166, in order to communicate fingerprint images to relevant agencies.

In a significant number of scientific fields and disciplines, the ISO 3166 code elements are assigned to country-based objects, products and symbols, such as stamps (philately) or flags (vexillology).

ISO 3166 is also used to identify original place names for genealogical purposes or regional patronymic researches. The case of England provides an interesting anecdote. The ISO 3166-2 codes representing the administrative divisions of this part of the United Kingdom, derived from the British Standard BS 6879, were initially based on the County (or Chapman) Codes established by Dr. Colin Chapman precisely for genealogical searches.

Finally, the health sector (epidemics, disease control, biomedical equipment) uses ISO 3166 code elements in its work.

Living organisms themselves are no exception to the rule, and their identifications refer to ISO 3166 code elements :

- Animals : horses (Universal equine life number), marine organisms
- Plants : herbariums, flora, taro species.

Even if the many examples offered in this article only marginally represent the great variety of uses of ISO 3166, they provide an overview of the breadth and scale of its adoption and implementations. ■



About the author

François Demay is, since 2000, a consultant in lexicography, terminology, and information and language processing. He was Secretary General of the Encyclopaedia Universalis publication from 1965 to 1977. In 1977, he became the Scientific and Technical Editor and subsequently, the Editor-in-Chief of the Larousse dictionaries and reference books. Mr. Demay became special advisor to Larousse’s CEO in 1996 and was seconded to New York on an observation assignment. From 1997 to 2000, he was the Editor-in-Chief of the French version of (Microsoft) Encarta Encyclopedia.

Remarkable women face the challenges of standardization

On International Women's Day, held annually on 8 March, ISO highlighted some of the outstanding leadership and work of women standardizers. Below are the stories of five remarkable women with very different roles and experiences in a domain that has traditionally been male dominated.

A sincere thanks to all the women of ISO!

Breaking taboos

Sophie Clivio (France)

ISO Technical Group Manager .

What are the challenges of being a woman in standardization ?

Historically, standardization has been a traditionally male-dominated environment. Many product standards were, and still are, developed by technical experts and engineers involved in fields which are predominantly represented by men.



Sophie Clivio.

And here I would like to pay tribute to the person (a man!) who had the courage to recruit me (a long time ago now), breaking taboos by inviting a woman in a man's world. It was my first experience as a Technical Programme Manager (TPM), and I was going to work with the committees on photography, automation systems and integration and other technical areas, and take over a position previously held by a man. To be honest, I found it difficult at first to establish my credibility in standardization, and I had to resort to a few artefacts.

But I tackled this challenge to the best of my abilities. Having a solid background is essential. A TPM needs to have a thorough knowledge and understanding of procedures (our role is to be experts in procedures and processes). By working hard to promote

and facilitate the work of my committees, I established my credibility and gained their interest. It is a win-win situation.

How does participation in standardization empower you as a woman ?

I am not sure that I feel empowered! Yet the chance of having participated in many different areas through standardization has broadened my mind and awoken the urge to embark on new adventures.

I am often told that I talk too much of my experience with ISO 26000 on social responsibility (SR), and it is true! Yet, the development of this standard undeniably had an impact on me. I learnt a lot from a professional standpoint of course, but also (and more importantly), from a personal one. It was an extraordinary life experience.

Gender balance (or at least a 40-60% ratio) was ensured in every respect (stakeholder representations, regional representation), and this was an unprecedented situation in ISO, especially given the monumental number of participants, some 660 experts and observers.

And this is an interesting fact: did you know that difficult disputes and issues that came up during the development of the standard were addressed within special "task forces". And that some of them, and highly respected ones, were successfully "led" by women?

I would not be so bold as to say that this standard owes its success to women (this would sound as staunch feminism), but without women, the standard would not be what it is today!

How can we attract more women to standardization ?

Perhaps this could be done through the promotion of ISO's work and of standards development. Many people in the public are not necessarily aware of everything we do, and that many officer positions are open to women, including at the ISO Central Secretariat in Geneva.

My advice to women: come and join us! This work is rewarding, different from what you know and, above all, fascinating.

One woman, 6 ISO roles

Mojdeh Tabari (Iran)

Secretary of 3 ISO TCs and Convenor of three ISO WGs. Working at the ISO member for Iran, ISIRI.

At first, getting involved in standardization was not simple. There were a lot of unforeseen obstacles, which required an immense amount of work and effort. But it was worth it, for the empowerment and experience gained from managing standardization at an international level, but also for the opportunity to make a difference in areas of importance to women.

I am referring to the establishment of the ISO technical committee on cosmetics. These products have traditionally been a concern of women, though many are also used by men and children. Cosmetics are applied directly



Mojdeh Tabari.

on the skin can have many adverse reactions if they do not meet the highest standards. The ISO standards developed by this committee are used by industry to ensure the safety and quality of these products.

I can proudly say as a woman that I proposed and contributed to setting up this technical committee, successfully managing its Secretariat, leading standardization projects and promoting the reactivation of two other ISO committees which were on stand-by for more than 10 years.

I have learnt a lot from these experiences, and feel quite comfortable in standardization and management at an international level.

I believe that the successful involvement of women in the management of ISO secretariats and projects builds-up women's self-confidence. I hope that my experience will encourage other women who also wish to make a powerful contribution to increase their participation in standardization.

I am proud that in Iran, several women are participating in the development of national and international standards through the Institute of Standards and Industrial Research of Iran (ISIRI).

My message to women: Work hard, do not be afraid of obstacles and problems. Be confident and trust in your capabilities. Get involved!

Reaching the top

Ziva Patir (Israel)

VP Standardization at Better Place.

Former ISO VP and former Director-General of the ISO member for Israel, SII.

What are the challenges and advantages of being a woman in standardization ?

When I started my career in standardization, the number of women was not only limited, but almost non-existent in high-level positions. Yet the right ingredients were there for women to excel since hierarchies were increasingly

flatter and the system was more about building consensus than about giving orders.

Of course, generalizations usually oversimplify the situation, but there are some characteristics that are globally recognized in women. These include a knack for collaboration, understanding cultural gaps and creating a good atmosphere, together with patience, precision, dedication and long-term commitment. All of these make women great standardizers!

For instance, in many occasions all it takes to move forward on a difficult issue is to ask the right questions. Often most men are just too embarrassed to ask. It is an opportunity for women to create an innovative approach to “business as usual”.

On International Women’s Day, we should recognize the remarkable contribution that women standardizers make to building a sustainable future. A landmark example being the massive impact of so many young women on the development of ISO 26000 on social responsibility, one of ISO’s most influential projects to date.



Ziva Patir.

How does participation in standardization empower you as a woman?

It empowers you as a leader in your community. Your womanlike behavior is an advantage!

How can we attract more women to standardization?

There are many women already involved, but it is time to let them manage standardization, that is, let them into the high-level roles. In some European countries, you hardly see women in standardization work, while in others the work may be only done by women!

What advice would you give to women considering getting involved in standardization?

Jump into the water! Enjoy and explore the variety of cultures celebrating humanity.



Norma McCormick.

Fighting for consumers

Norma McCormick (Canada)

Chair, ISO Committee on consumer policy (ISO/COPOLCO).

I became involved in standardization because standards are very important in my field of occupational health and safety. It was a logical path for me to broaden my interests to consumer health and safety, and this led me to ISO.

I have been Chair, Convenor and member of several national and international standardization committees. I am now the Chair of the ISO Committee on consumer policy (ISO/COPOLCO). And I am very proud of the long history of women’s contributions to issues of consumer concern and of their achievements in standardization.

ISO/COPOLCO, which provides ISO with advice from a consumer viewpoint on current and potential standardization and conformity assessment work, has a strong record of female participation and leadership. In its almost 35-year history, there have been nine Chairs, five of which were women!

Even in 1978, at our initial plenary, a large percentage of the 40 delegates present from 17 countries, were women. And today, many women are participating in national and international technical work.

As a member of three Canadian and three ISO technical committees, I am pleased to observe that increasingly women are coming forward to contribute their expertise.

ISO 26000, a turning point

Perla Puterman (Venezuela)

Expert at ISO Working Group on Social Responsibility, 36 years in standardization.

Today, women’s involvement in standardization is more and more relevant. For

example, in several Latin American countries, and perhaps in other countries, the work of national standards bodies in both national and international standards development is conducted predominantly by women. Some of the most remarkable cases are that of Argentina, Bolivia, Colombia, Chile, Costa Rica, Cuba, Mexico, Paraguay and Venezuela.

In ISO, women have also had prominent roles. Ziva Patir, for instance, was President of the ISO Technical Management Board, as well as the initiator and promoter of what became ISO 26000 on social responsibility.



Perla Puterman.

In order to reinforce the participation of women in the development of ISO 26000, ISO promoted as far as possible the requirement of an even number of men and women in the working group, as well as in all subgroups and any other groups (e.g. the Chair Advisory Group and the Integrated Drafting Team).

The participation of women experts and observers increased from 33 % in September 2005 to 42 % in May 2009 which is a remarkable target.

Even though we were still not the majority, our voice was strongly taken into account, particularly in issues related to human rights and labor practices, for example, in the:

- Definition of gender equality: “equitable treatment for women and men”
- Section on “Gender equality and social responsibility”
- Human rights issues: Discrimination and vulnerable groups
- Labour practices issues: Employment and employment relationships, and human development and training in the workplace
- Consumer issues: Promotion of gender equality and empowerment of women.

We hope that ISO 26000 has set a benchmark to encourage participation of women in all areas of standardization!

These interviews were carried out by Maria Lazarte, Assistant Editor, *ISO Focus+*

Farewell to Gösta Roos

Gösta Roos died peacefully at the age of 82 on 18 February 2011.

Gösta Roos is remembered for his ardent support and exhaustive knowledge of ISO 3166 country codes, which were pivotal to the widespread use and application of this very important standard.



Gösta Roos worked as a Swedish delegate to the United Nations

Economic Commission for Europe (UNECE), before being appointed Technical Adviser to UNECE's Working Party on Facilitation of International Trade Procedures (WP.4) in 1963.

In 1972, he joined the Group of Experts on Automatic Data Processing (ADP) and Coding for United Nations Code for Ports and other Locations (UN/LOCODE), which originally considered the need for a comprehensive code covering all locations where goods were subject to customs control.

Mr. Roos was responsible for instigating the development of country codes, and for establishing the joint work between several international organizations and ISO, which led to the publication of ISO 3166. From the inception of ISO 3166 until his retirement in 2003, Mr. Roos led the ISO 3166 Maintenance Agency as Chair.

Mr. Roos is fondly remembered for his kindness and keen sense of humour, which proved instrumental in resolving difficult, and often political, issues associated with the assignment of country codes.

Financial services workshop

ISO is recognized as an important forum engaging the financial services industry stakeholders and supporting the development of solutions meeting their needs. This work is carried out through its technical committee ISO/TC 68, *Financial services*.

The investigation of new requirements for standardization in the field of financial services has been identified as a priority by ISO.

ISO is therefore organizing the workshop "Standardization in the field of banking, securities and other financial services: Current and future needs" on 13 May 2011 in Amsterdam, the Netherlands. The workshop will be held in conjunction with the 2011 meetings of ISO/TC 68.

The workshop is open to all ISO member bodies, and targets an audience of qualified professionals/senior managers from the (financial services) industry and regulators.



ISO shapes future of electric vehicles

ISO recently updated an agreement with the International Electrotechnical Commission (IEC) to improve cooperation on standards for electric vehicles and automotive electronics.

Electric vehicles have special requirements and will impose a potential impact on the electricity supply infrastructure when connected to the grid for recharging. The recent ISO/IEC Memorandum of Understanding (MoU) recognizes that when the vehicle is in autonomous (running) mode, vehicle manufacturers are responsible for defining the required standards – mainly developed by ISO. When connected to the grid, standards need to be agreed jointly between the vehicle manufacturers and the electricity supply industry as represented in the IEC.

The MoU is also designed to leverage the considerable evolution in vehicles from mechanical or hydraulic controls to electronic systems. This evolution necessitates a stronger collaboration between vehicle manufacturers, principally represented in ISO technical committee ISO/TC 22, *Road vehicles*, and electronic component manufacturers active in a range of specific IEC committees.

For example, the updating and extension of ISO 6469 on safety specifications for electric vehicles is an important project to ensure their safe handling. It is being adapted to the new challenges of battery electric vehicles (BEV) and hybrid electric vehicles (HEV), covering safety from electric hazards, on-board rechargeable energy store systems, protection against failures, etc.

Workshop



International Standards could help reduce the dangers of "driver distraction" – caused by using mobile phones and other communication equipment at the wheel – which can have lethal consequences.

"Managing driver distraction" was one of the main themes to be addressed in the Fully Networked Car workshop organized by the partners in the World Standards Cooperation at the Geneva International Motor Show.

Given the explosion in sales of mobile phones and on-board information and

communication technology (ICT) systems, drivers are now commonly making calls, texting, and operating GPS navigators and other equipment while at the wheel of moving vehicles, increasing the risk of traffic accidents.

Driver distraction is now recognized by many countries as a growing public health issue. For example, in the USA, the National Highway Traffic Safety Administration (NHTSA) estimates that in 2009, 17% of all crashes in the country involved distracted driving and was responsible for nearly 5 500 fatalities.

Standards and design guidelines for ICT systems and devices, whether portable or fixed in the vehicle, can contribute to decreasing driver distraction, allowing the driver to focus on operating the vehicle and the road ahead.

The workshop brought together key players and major industry representatives involved in the development of ICT technologies for the motor industry and related standards. They discussed how the standardization organizations can best collaborate to meet the industry's needs in aspects such as interoperability.

ISO has developed more than 800 standards for the automotive sector through its two technical committees active in the issues addressed by the workshop: ISO/TC 22, *Road vehicles* and ISO/TC 204, *Intelligent transport systems*.

World Standards Day 2011 poster competition!

A competition open to all has been launched to design a poster for World Standards Day, 14 October, on the theme, "International Standards – Creating confidence globally".

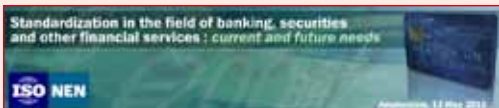
The competition is being held by the World Standards Cooperation (WSC), which comprises the International Electrotechnical Commission (IEC), ISO and the International Telecommunication Union (ITU).

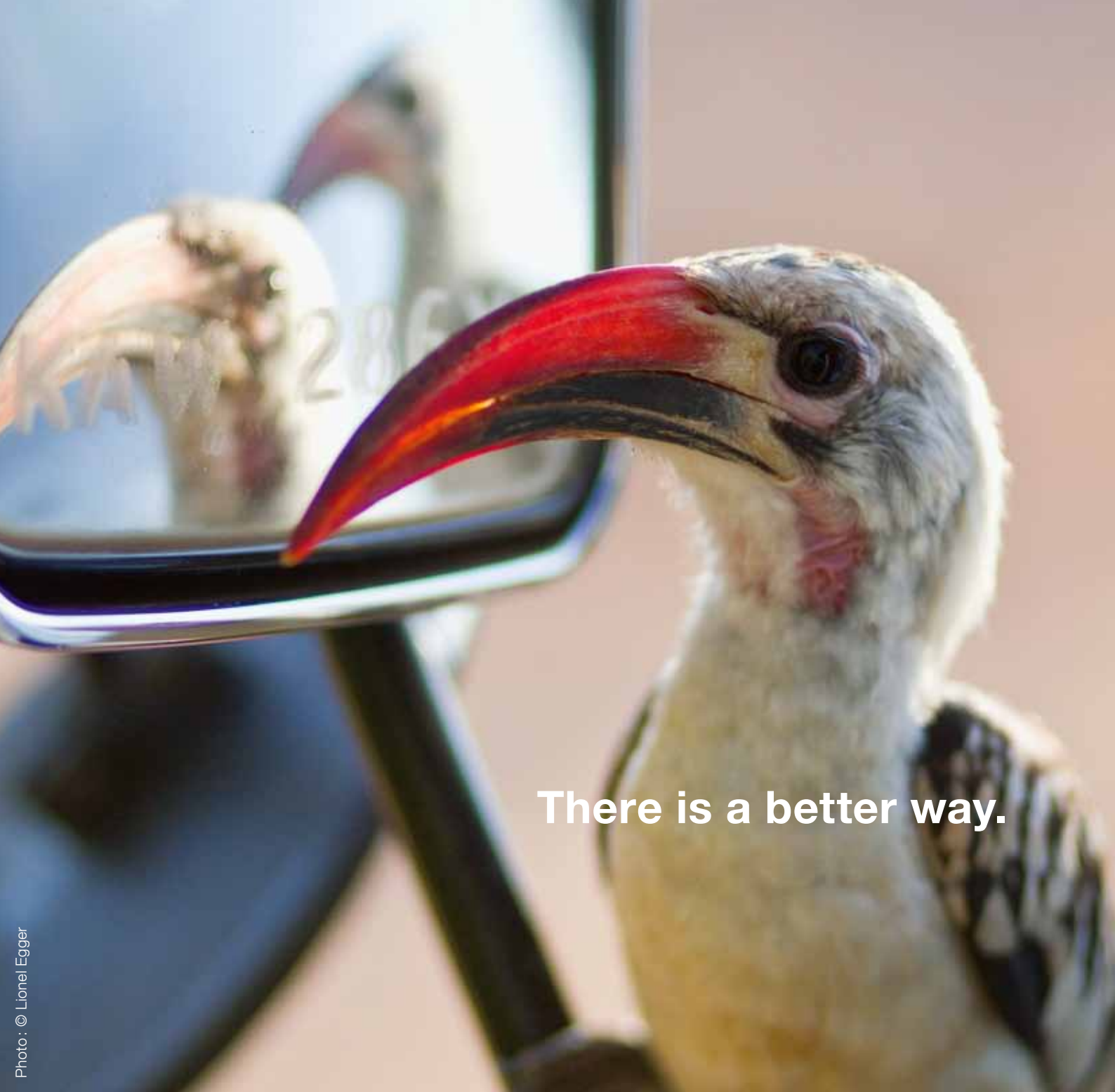
The designer(s) of the best poster will win 1 500 Swiss francs, with the three runners-up receiving 500 Swiss francs each.

To compete, designers should send their entries in .jpg or .png format to the following e-mail address: wsdposter@worldstandardscooperation.org. Submissions will be accepted until 30 April.

IEC, ISO and ITU representatives will choose the finalists. The shortlisted entries will be published on the WSC Website. The general public will choose the winning designs. Each finalist entry will have a Facebook "Like" button. The entries to receive the largest amount of Facebook "likes" will win the competition. Voting will open on 5 April and close on 30 April. IEC, ISO and ITU will announce the winners shortly after. People can follow the World Standards Day poster competition on Twitter and Facebook.

Any questions about the competition should be sent to: wsdposter@worldstandardscooperation.org, Twitter or Facebook. ■





There is a better way.

Photo: © Lionel Egger

ISO Focus+ on the road ahead.



It's good to know where we've come from. It's how we avoid, for example, re-inventing the wheel. But driving by looking permanently in

a rear view mirror is not recommended. ISO standards are a rich source of

existing know-how, distilling years of experience and expertise. But brand new standards, standards now under development and standards identified as needed in coming years shape our present, immediate future and beyond. You can stay up to speed on all these developments by reading *ISO Focus+* magazine, published in English and French, in print and online editions, 10 times a year. To get where we want, the best way is to "focus+" on the road ahead.

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1, ch. de la Voie-Creuse
Case postale 56
CH-1211 Genève 20





Participants at the ISO workshop on the benefits of standards in Colombo, Sri Lanka.

Benefits of standards

ISO workshop for South Asian countries

by Reinhard Weissinger

A regional workshop was held in March 2011 in Colombo, Sri Lanka, hosted by the Sri Lanka Standards Institution (SLSI) on the topic of “Standards, economic development and trade”. The three-day workshop addressed the relationship between standards and trade and introduced a number of practical examples for difficulties faced by countries in South Asia in their export activities due to non-tariff barriers to trade, which include issues related to standards.

The key subject of the workshop was how can the economic and social benefits that organizations, in particular companies, obtain from the use of standards be assessed and quantified. For this purpose, the ISO methodology for the assessment of the benefits of standards was introduced. Preliminary results from ongoing case studies, in which this methodology had already been applied, were presented and discussed with the participants.

The workshop also looked at the principles and obligations of countries that have signed the WTO Agreement on Technical Barriers to Trade and the notification services about national regulations that may have a trade impact.

The workshop was jointly run by one expert from the ISO Central Secretariat and

one from the Federation of Indian Export Organizations (FIEO) in New Delhi.

ISO members from the following countries attended the event: Bangladesh, Bhutan, India, Iran, Laos, Nepal, Sri Lanka, as well as from Palestine, The Philippines, Kazakhstan and Tajikistan.

ISO is planning to initiate similar case studies, in the form of cooperation projects, with member bodies that have participated in the workshop. ■

Reinhard Weissinger is Manager, Research, Education and Strategy, ISO Central Secretariat.

CEO Forum in Asia

by Bambang Setiadi

ISO, in conjunction with the Standardization Agency of Indonesia (BSN), held the Forum for Chief Executive Officers of National Standards Bodies (NSB) in Asia. The event took place in Bali, in March 2011.

Director General of Standardization and Consumer Protection in Indonesia’s Ministry of Trade, Nus Nuzulia Ishak, opened the forum to 23 delegates from 16 countries. Her speech was followed by welcoming remarks from Dr. Bambang Setiadi, Chairman of BSN and Chair of ISO’s Committee on developing country matters (ISO/DEVCO). ISO Secretary-General Rob Steele reviewed the challenges and opportunities facing member bodies. ISO expert Graham Holloway facilitated the discussions.

By encouraging high-level exchange of national experience, the forum is set up to provide CEOs the opportunity to share best practice and facilitate regional cooperation. A primary focus is on good governance and sound financing in a modern standards body.

Over the course of the three days, discussion topics included:

- Unpacking the balanced scorecard – How can it be applied by a national standards body?
- A regional perspective on challenges faced by NSBs and the need for cooperation
- Setting the scene – Methodology for the CEO forum
- Regional and national standards vision and strategy
- Financing and development of NSBs.



ISO Secretary-General Rob Steele speaking at the first ISO CEO forum for NSB in Asia.



Participants at the ISO CEO Forum in Bali.

In parallel to the forum, BSN, presented an exhibition of publications available in the BSN library, also covering national implementation of the Indonesian National Standard GENAP SNI. ■

Dr. Bambang Setiadi is Chairman of BSN and Chair of ISO's Committee on developing country matters (ISO/DEVCO).

ISO 26000 non certifiable

by Sean MacCurtain

The development of ISO 26000 was, from the start, never intended to be certifiable. This was a condition to its acceptance as a work item, and the basis for its development as a guidance document – which does not contain any requirements.

In its scope, ISO 26000 clearly states: *This International Standard is not a management system standard. It is not intended or appropriate for certification purposes or regulatory or contractual use. Any offer to certify or claims to be certified, to ISO 26000 would be a misrepresentation of the intent and purpose and a misuse of this International Standard. As this International Standard does not contain requirements, any such certification would not be a demonstration of conformity with this International Standard.*

To support this statement, the International Accreditation Forum (IAF) passed a resolution which states that there will not be accredited certification to this standard and urges certification bodies not to promote or provide certification to ISO 26000.

Beyond these statements and resolution, the structure and content of the standard underscores that certification is not viable nor an accurate reflection of the implementation of the standard.

A main objective of certification is the comparability of certification results. A document suitable for certification should contain requirements that are stated in a manner that will result in accurate and uniform interpretation so that users have a common understanding of how it is to be applied.

When an organization is certified to a standard, it should be comparable to another organization certified to the same standard by a different certification body.

The content of ISO 26000 containing only guidance and recommendations allows for, and encourages flexibility in how these guidelines are interpreted and implemented, from one organization to another, and from one region to another, dependent on their specific circumstance. This makes it impossible to compare certifications between organizations. We would have no idea the degree to which the standard has truly been implemented.

Additionally, certification requires that an audit is performed which is a determination of the extent to which requirements are fulfilled. In order to perform a certification audit therefore, a set of requirements is needed. If an audit cannot result in an accurate reflection of the implementation of the requirements, then it calls into question the value of the certification. Taking all of the above into consideration, it is neither honest nor useful to certify to ISO 26000.

ISO has indicated that should, a market need be identified for a certifiable standard in this area, it would be willing to develop such a standard in accordance with the principles of consensus and transparency.

Should there be a widespread and market relevant need identified for a certifiable standard in this area, ISO would consider developing such a standard strictly in accordance with the principles of global relevance, consensus and transparency. ■

Sean MacCurtain is the Secretary of the ISO Committee on conformity assessment (ISO/CASCO).

Targeting capacity building for ISO 26000

by Roswitha Franz

ISO's Training and Development Unit (ISO/DEVT) is launching a new capacity building project on the uptake and use of ISO 26000 which gives guidance for social responsibility in the Middle East and North Africa (MENA) targeting eight pilot countries: Algeria, Egypt, Iraq, Jordan, Lebanon, Morocco, Tunisia, and Syria. The four-year project is funded by the Swedish International Development Cooperation Agency (Sida).

Around the world, organizations and their stakeholders are becoming increasingly aware of the benefits of socially responsible behaviour, a primary objective of which is to contribute to sustainable development. It is important that organizations address social responsibility, irrespective of social or economic circumstances.



An organization's fulfilment of this mandate – in relation both to the society in which it operates and to its impact on the environment – has become a critical part of measuring overall performance and the ability to operate effectively.

This project aims to encourage selected organizations to apply the principles of social responsibility in their operations, leading to an improved image for the organizations themselves and for productive sectors in the countries as a whole.

The overarching objective of the project is to build national capacity in each of the target countries, using the national standards body as the central pivot. The project covers a series of activities – such as train-the-trainers and workshops – to create a pool of national and regional experts who can then assist pilot organizations in the selected countries in applying ISO 26000.

In addition, the regional exchange of experience and good practices among the partner countries on the application of ISO 26000 will be facilitated, and a regional co-ordination mechanism involving NSBs and other regional players will be established.

To kick off the implementation of the project, the chief executive officers of the

national standards bodies from the pilot countries held their first meeting in April to make a firm commitment on implementation arrangements for the project and to provide their strategic input on planning for implementation.

This project forms part of the activities of the *ISO Action Plan for developing countries 2011–2015*. ■

Building linkages between TPOs and NSBs for export success

by Roswitha Franz and Ludovica Ghizzoni

A regional workshop in Havana, Cuba, in November 2010 brought together some 40 senior officials from national standard bodies (NSBs) and trade promotion organizations (TPOs) representing 22 countries from the Caribbean, Central American and South American regions.

Organized by ISO, in collaboration with the International Trade Centre (ITC), the workshop explored how cooperation between TPOs and NSBs can improve the international competitiveness of enterprises.

The three-day workshop was hosted by the *Oficina Nacional de Normalización (NC)* in collaboration with the *Centro de Promoción del Comercio Exterior y la Inversión Extranjera de Cuba (CEPEC)*.

In her opening remarks, NC Director-General Nancy Fernández Rodríguez noted that complying with technical requirements for goods and services is a challenge not only for producing and marketing organizations, but also for NSBs and TPOs. She highlighted the importance of NSBs and TPOs in providing the rules, regulations, capacity building services, training and guidance to enable enterprises to increase exports.

The workshop in Cuba was the second in a series related to this new joint ISO/ITC initiative. A similar event, held in Malaysia in December 2009*, led to the joint ISO/ITC publication “Building linkages for export success**”

Country case studies, plenary discussions and breakout sessions clearly defined the individual roles of TPOs and NSBs, along with identifying possible areas of collaboration, mainly in the area of



Participants at the ISO/ITC workshop in Havana, Cuba.

information linkages, capacity building and advisory services.

Because collaboration between NSBs and TPOs varies from country to country, special emphasis was placed on providing a framework for sharing experience with the aim of identifying best practices. Potential future collaboration activities between NSBs and TPOs were defined, and the groundwork was laid for development of country-specific and regional action plans.

The workshop evaluation report indicated that participants were highly satisfied with the course, saying that it met their expectations and will help them in their work.

During the closing ceremony of the workshop, América Santos Riveras, the Vice Minister of Cuba’s Ministry of Science, Technology and Environment, emphasized the importance of issues related to export and quality and their relevance regarding international trade. She called upon NSBs and TPOs to work together to meet technical requirements for promoting and facilitating competitive international trade.

The event was organized with financial support from the Swedish International Development Cooperation Agency (Sida). ■

Roswitha Franz is Project Manager, ISO Development and Training Services at ISO Central Secretariat.

Ludovica Ghizzoni is Adviser on Export Quality Management, Enterprise Competitiveness Section at International Trade Centre (ITC)

* www.intracen.org/eqm/events

** English: www.iso.org/iso/building_linkages.pdf; French: www.iso.org/iso/fr/building_linkages.pdf; Spanish: www.iso.org/iso/building_linkages-sp.pdf

ISO training 2011

by Glenn Bosmans

Each year, the ISO Central Secretariat (ISO/CS) organizes training for ISO members and professionals engaged in standards development. In 2011, the majority of courses are being organized as part of three ISO Secretaries’ Weeks. Each week will consist of three individual courses to be held over five days.

The purpose of Secretaries’ Week is to train ISO members hosting (or considering) secretariats of ISO technical committees and subcommittees. The training focuses on the appointed secretaries and their support staff.

The remaining courses are scheduled to be held in Geneva this year:

ISO Secretaries’ Week (June)

20 June	Procedures for ISO secretaries
21-22 June	Drafting standards in accordance with <i>the ISO/IEC Directives Part 2</i> , using ISO authoring template
23-24 June	eServices for ISO secretaries

ISO Secretaries' Week (October)

31 October	Procedures for ISO secretaries
1-2 November	Drafting standards in accordance with <i>the ISO/IEC Directives Part 2</i> , using ISO authoring template
3-4 November	eServices for ISO secretaries

In addition, ISO will organize the following courses in 2011:

5-7 April	Introduction to ISO eServices (with emphasis on NMC)
22-24 November	Introduction to ISO eServices (with emphasis on NMC)
6-7 December	Good standardization practice

To attend, participants must complete the pre-registration form available at www.iso.org/training-dates. Participation is free, but spaces are limited. Financial assistance is not available. ■

Setting national standardization strategies

by Glenn Bosmans

"All the flowers of all the tomorrows are in the seeds of today." (Indian proverb)

The need for a good strategic plan is essential for standards bodies that grapple daily with limited resources. It was also the driver in 2009, when one of the discussion groups of the ISO Committee on developing country matters (ISO/DEVCO) recommended that guidance be developed on the formulation of national standardization strategies.

This led to a new classroom training and online mentoring programme, "Setting national standardization strategies", developed by ISO Development and Training Services (DEVT) and based on the methodology created for ISO eLearning Module 1, "Assessing national priorities".

Organized in three distinct parts, and centred around an intensive six-day residential training course, the overall objective of the

programme is the establishment of multi-year national standardization strategies by participating ISO members.

The programme is designed for standards officers with responsibility for planning, and encourages proactive and rigorous assessment of national priorities for standardization, ensuring that limited resources are allocated for optimal impact and that standardization activities are based on clear, well-documented needs.

The programme also provides guidance on finding and assessing useful International Standards among the thousands published or under development. It also encourages stakeholder input into setting national standardization strategies.

In the weeks leading up to the course, each participating ISO member is required to compile data relating to their country, including sectoral data on GDP, imports and exports, national plans, social issues, available human resources, and stakeholder requests for new standards. Based on this data, a number of countries are chosen to be developed as case studies by the participants during the course.

Using prepared templates, students are shown how to prioritise their national socio-economic standardization requirements and develop solid national agendas in standardization based upon available human resources and pertinent International Standards. A "learning by doing" approach is applied, as well as group work and experience sharing.



Group work at the national strategies course in Papua New Guinea.

An online document management system has been developed for participants to share their planning experiences, and online mentoring is available for a limited time to all participants as they develop their own plans after returning home.

Two regional training events were organized in 2010. In November, a course was organized in Paramaribo, Suriname, hosted by Suriname Standards Bureau (SSB), in collaboration with CARICOM Regional Organization for Standards and Quality (CROSQ).

Case studies were developed for Jamaica, Guyana, Dominica and Grenada.

A second regional event took place in Port Moresby, Papua New Guinea, hosted by the National Institute of Standards and Industrial Technology (NISIT). Case studies were developed for Sri Lanka, Pakistan and Cambodia. Further courses will be organized in 2011.

The benefits of the training programme are becoming evident, with a number of countries providing draft national standardization plans. ■

Glenn Bosmans is Project Manager, ISO Development and Training Services, at ISO Central Secretariat.



Participants at the national strategies course in Suriname.

“Security is paramount”

Indian terminal implements ISO 28000



Photo: © Visakha Container Terminal Pvt. Ltd (VCTPL)

Ship-to-shore gantry cranes, transfer cranes and rail and road connections ensure speedy import and export of containers to and from the Visakha Container Terminal.

by Garry Lambert

Visakha Container Terminal Pvt. Ltd (VCTPL), of New Delhi, India, recently achieved certification to ISO 28000:2007, *Specification for security management systems for the supply chain*, covering all its activities at the Port of Visakhapatnam in Andhra Pradesh. With a natural depth of 16.5 m and a total quay length of 450 m, it is the only container terminal in India that can accommodate the largest container vessels sailing today.

The company's achievement is the latest in a series of management system implementations and certifications that includes ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007, underlining “its commitment and drive to quality, care for environment, safety, health and security at all levels within the organization.”

ISO 28000:2007 specifies the requirements for establishing, implementing,

maintaining and improving a security management system, including those aspects critical to security assurance of the supply chain, and is applicable to all sizes of organization in manufacturing, service, storage or transportation. Certification to the International Standard enables organizations to demonstrate that they are contributing significantly to supply chain security.

Security of paramount importance

“At a time when coastal security is of paramount importance, VCTPL took the initiative to obtain this certification and has again proved itself to be a truly world class container terminal, setting new security standards, said Captain Sriram Ravi Chander”, Chief Operating Officer of VCTPL.

“ISO 28000 sets in place mechanisms and processes to address security vulnerabilities at strategic and operational levels, as well as to establish preventive action plans. The standard complements all national/international security legislative codes, including the International Shipping and Port Facility Security (ISPS) Code to which VCTPL already conforms,” he explained.

The company underwent a third-party certification audit over three days in November 2010, which focused on container security,

physical access controls, personnel and procedural security, security training, IT security, business partner requirement and threat awareness. VCTPL is also required to undergo surveillance audits every year over the next three years during the validity period of the certification.

ISO 28000 certification a major step

ISO Focus+ interviewed Captain Ravi Chander about his company's ISO 28000 implementation experiences, and asked if he had already seen benefits:

ISO Focus+: *Could you please comment on the reasons why VCTPL decided to pursue ISO 28000 certification?*

Capt. Ravi Chander: In today's global economic landscape, security management has become a complex challenge in all areas of industry and, in particular, supply chains. Logistics operations and supply chain partners are often scattered worldwide with varying national/international regulations and business processes. With heightened concern over coastal security and global supply chain security, ISO 28000 certification is a major step towards gaining competitive advantage to gain new business and consolidate existing business.

ISO Focus+: *How long have you been operating your procedures in accordance with the standard?*

Capt. Ravi Chander: ISO 28000 has been implemented from January 2010 and the certificate was awarded in December.

ISO Focus+: *Did you meet any difficulties in implementing the standard, and did you need to adapt it to suit your organization, or did you find it a good fit?*



Captain Sriram Ravi Chander,
Chief Operating Officer, Visakha Container Terminal.

VCTPL at a glance

The Visakha Container Terminal Pvt. Ltd (VCTPL), was set up in 2003 under the aegis of the Visakhapatnam Port Trust as a joint venture between DP World and United Liner Agencies of India (Private) Ltd.

VCTPL is equipped with a modern infrastructure meeting International Standards, including ship-to-shore gantry cranes, transfer cranes and reach stackers, and a fully computerized environment for vessel planning and yard management operated by trained personnel. With a quay length of 450 m, scope for future expansion to 700 metres, and a natural depth of 16.5 m, it is the only terminal in India capable of accommodating the largest container vessels sailing today.

The terminal is centrally located on the East Coast of India to cater for a hinterland of seven states within 700 km, and extending to North and North East India. With excellent rail and road connections, it provides for shipments to and from Delhi, Hyderabad, Nagpur and Raipur and the Far East and South East Asia.



The Visakha Container Terminal at the Port of Visakhapatnam in Andhra Pradesh, India, operates in conformity with the ISO 28000 supply chain security management standard.

With a growth rate of 18% versus the national average of about 12%, VCTPL has grown rapidly since its start-up, and currently provides the only central East Coast terminal for India's growing containerized volumes.

Capt. Ravi Chander: As VCTPL is complying with ISPS Code requirements, standard operating procedures, emergency plans and infrastructure were already in place. We have fine-tuned all procedures and plans in accordance with ISO 28000 standard requirements.

ISO Focus+: *Have you integrated the new system with your existing ISO 9001 and ISO 14001 systems, or are they operated independently?*

Capt. Ravi Chander: Our ISO 28000 management system is operated independently and is not integrated with the existing ISO 9001, ISO 14001 and OHSAS 18001 systems.

ISO Focus+: *Can you comment on the benefits of implementing a security management system in accordance with ISO 28000, or is it too early to tell?*

Capt. Ravi Chander: Though it is too early to measure the benefits of security management system implementation, some of the immediate benefits are the following:

- Improvement in security management processes to protect business interests and the supply chain
- Improved coordination with partners to share responsibility
- Improved risk management capability to prevent losses
- Positive message to customers, partners and employees showing clear commitment to security
- Enhanced reputation in the industry.

ISO Focus+: *Do you have any other comments about the importance of ISO 28000 to your organization?*

Capt. Ravi Chander: Mindful of the fact that security does not stop at the terminal gates, VCTPL has also taken extensive efforts to build security awareness throughout the supply chain, with warehousing facilities, shipping lines and road/rail carriers. ■

Garry Lambert is a British freelance journalist based in Geneva, Switzerland.

Carbon footprint initiative

Fujitsu innovates with ISO standards

by Hellmut Böttner

When it wanted to gain a comprehensive overview of the environmental impact of typical products within its comprehensive portfolio, Fujitsu turned to ISO standards to establish measurement criteria for its “Product Carbon Footprint (PCF)” initiative.

Fujitsu chose to base its studies on globally recognized ISO standards, reflecting its own status as a leading provider of information and communication technology (ICT-based business solutions for the global marketplace).

It was the ISO 14040 and ISO 14044 life cycle assessment (LCA) standards that were chosen by Fujitsu as it put together its own LCA in cooperation with the BIFA institute, an institute for ecological issues in Augsburg, Germany, and the Fraunhofer Institute for Reliability and Microintegration (Fraunhofer IZM), in Berlin.

The resulting LCA study analyzed selected Fujitsu products in its PC and server lines,

throughout their product life cycle, and evaluated the results. Fraunhofer Institute then critically reviewed the findings to ensure they were consistent with ISO 14040 and ISO 14044, and gave Fujitsu positive confirmation.

With the LCA and PCF initiative, Fujitsu’s aim is to identify and develop means of precisely analyzing the true emission value of products. Wanting to understand the ecological footprint of its products is part of Fujitsu’s green strategy, and linked to its goal of reducing CO₂ emissions during the entire product life cycle (cradle to grave) of its products, as well as helping the company to innovate more environmentally-conscious products.

Fujitsu will also share the results and experiences from this project to support its customers in their future projects to lower their own CO₂ emissions.

However, in setting up the project, Fujitsu found that the calculation of a comparable and absolute value for the CO₂ footprint was not possible due to methodological difficulties and the lack of International Standards, although the ISO 14067 standard on the carbon footprint of products, now under development, will go a long way towards addressing this in the future.

Fujitsu found it very helpful to be able to use the ISO 14040 and ISO 14044 standards as a guideline for its own studies. In conducting such detailed discovery, Fujitsu is one of the drivers within the information technology (IT) industry and is in ongoing contact with partners, suppliers and competitors to establish and use widespread common standards.

Green technology

The idea that “green technology” is the same thing as energy-efficient technology is still widespread, even among IT manufacturers. But energy efficiency is only one of the many aspects influencing the calculation of the ecological footprint.

Generally, the CO₂ footprint in CO₂ equivalents (CO₂e) is summed up throughout the complete life cycle of a product – from idea conception, through to recycling. That includes the production of raw materials as well as the manufacturing of the supplier components, transport, assembly, use phase, and recycling or disposal.

For example, the desktop PC ESPRIMO E9900 0-Watt and PRIMERGY TX300/RX300 S5 servers include the corresponding LCAs for mouse, keyboard, manual and packaging in LCA calculations. The calculation itself is done on the basis of a typical life cycle for products in this group.

As my colleague Armin Kumpf, who is Senior Director Quality Management at Fujitsu Technology Solutions, commented: “For many years, Fujitsu has researched the factors that have a lasting impact on our ecological footprint. However, to be able to compare and label products with regard to their CO₂ emissions, we need International Standards and a solid data basis for such comparisons.”

We believe that initiatives like this PCF project are an important step on a long road to comparable emission calculations. They allow helpful insights into the discharge of



Photo: © Fujitsu

The PRIMERGY RX300 S5, one of the servers used by Fujitsu for its product carbon footprint testing



Photo: © Fujitsu

Internal components of the ESPRIMO E9900 desktop PC undergoing rigorous tests.

emissions throughout the complete value chain. This way, we can identify future possibilities for reduction, through:

- Optimized use of energy and raw materials in the production process, as well as adopting alternative raw materials with a lower environmental impact
- Reduction in transport emissions resulting from the switch from air-freighting components from the Far East to rail and sea freight
- Development and provision of energy-efficient power supply units and products for the customer
- Optimal configuration of the main memory, graphics and energy options
- Choosing to use more energy-efficient ICT products (considerations based on certificates such as “Blue Angel” and “Energy Star”)
- Reuse and recycling of products and components in the Fujitsu Recycling Center in Paderborn, Germany, and worldwide.

Fujitsu's environmental initiatives

For many years Fujitsu has been involved in projects and initiatives dedicated to identifying the company's own emission values and possible improvement measures. Fujitsu pursues a dual strategy: On the one hand, the company concentrates on innovating environmentally conscious IT products (“Green IT”). Fujitsu's product and service portfolio already includes numerous “green” elements such as energy-efficient notebook models, the 0-watt PC and 0-Watt monitor, energy-efficient server and storage systems, plus assessment services for energy efficiency improvements in data centers.

At the same time, Fujitsu develops solutions which can help other companies, or

even entire industries, to specifically use IT for more environmentally-conscious infrastructures (“Green by IT”), for example in the traffic- or facility-management sector.

In 2007, the Fujitsu Group launched its “Green Policy Innovation” programme, which helped to reduce CO₂ emissions in Japan by an additional seven million tons. In 2009, Fujitsu expanded the project worldwide and is currently planning to reduce CO₂ emissions for an additional 15 million tons worldwide by 2012. The new global approach is a milestone on the way to the completion of Fujitsu's medium term vision, the Green Policy 2020.

Fujitsu found it very helpful to be able to use ISO 14040 and ISO 14044.

Furthermore, Fujitsu is listed as number one in two out of five categories in the recent environmental study of the independent IT industry analysts Gartner and the WWF on “Low-Carbon and Environmental Leadership in the ICT Industry 2010”. The largest independent study ever conducted analyzes the environmental endeavors of companies with a worldwide sustainability strategy for the reduction of greenhouse gases for ICT products. ■

About the author



Photo: © Fujitsu

Hellmut Böttner is head of the Corporate Quality department at Fujitsu Technology Solutions, Munich, Germany.

About Fujitsu

Fujitsu is a leading provider of ICT-based business solutions for the global marketplace. With approximately 170,000 employees supporting customers in 70 countries, Fujitsu combines a worldwide corps of systems and services experts with highly reliable computing and communications products and advanced microelectronics to deliver added-value to customers.

Headquartered in Tokyo, Fujitsu Limited (TSE:6702) reported consolidated revenues of 4.6 trillion yen (USD 50 billion) for the fiscal year ended 31 March 2010. For more information: www.fujitsu.com

About Fujitsu Technology Solutions

Fujitsu Technology Solutions is the leading European IT infrastructure provider with a presence in all key markets in Europe, the Middle East and Africa, plus India, serving large-, medium- and small-sized companies as well as consumers.

With its Dynamic Infrastructures approach, the company offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. Fujitsu Technology Solutions employs more than 13,000 people and is part of the global Fujitsu Group.

For more information, please see: ts.fujitsu.com/aboutus.



Photo: © Fujitsu

The headquarters of Fujitsu Technology Solutions in Munich, Germany.

An RPD is any personal protective equipment designed to protect the wearer against inhalation of unsafe atmospheres defined as air that is oxygen-deficient, exceeds occupational exposure limits, presents a fire or explosion hazard, or contains an airborne toxic or disease-producing contaminant in concentrations deemed to be hazardous.

ISO technical committee ISO/TC 94, *Personal safety – Protective clothing and equipment*, subcommittee SC 15, *Respiratory protective devices*, was established in 2001 to prepare global solutions in standardization of RPD. It consists of stakeholders such as manufacturers, unions, notified bodies, testing organizations, public authorities, universities and other organizations committed to global harmonization.

Many national standards are based on the ISO documents developed and maintained by the subcommittee. These may be adopted by regional or national bodies directly or with modifications to meet local requirements and environmental conditions.

Economic value

Forty percent of RPD manufacturers are multinationals, while the other 60% are small- and medium-sized companies with a maximum of 100 employees. Multinational manufacturers produce about 90% of the annual output of RPD devices. The worldwide annual market volume in 2010 amounted to some USD four billion, evenly divided between the two major product categories, filtering devices and supplied breathable gas devices. The annual market growth rate was approximately 3% between 2001 and 2010.

The economic value of the ISO/TC 94/SC 15 standards is of great importance to users and manufacturers alike due to risk-minimizing effects related to wearers' health and safety. Although the first choice is to eliminate or reduce hazards at the workplace through technical solutions or collective protection, personal protection is necessary and mandatory for some working environments.

Ensuring wearer safety

ISO/TC 94/SC 15 considers the safety of these devices as a fundamental social factor. User acceptance of personal protection devices can be increased by ergonomic design and convenient physiological characteristics, leading to reduced health hazards, optimized social aspects and acceptance of

Breathe easy

Global solutions for respiratory protective devices

by Wolfgang Drews and Hans-Peter Keller

Many industrial workplaces are polluted by dangerous impurities that can affect human health. Respiratory protective devices (RPDs) defend the respiratory tract against most hazards, and their use is often mandatory for industrial workers, miners, divers and firefighters.



SC 15 delegates during a meeting break in Pretoria, South Africa.

Complete collection

ISO/TC 94/SC 15 held its 9th meeting in October 2010 in Pretoria, South Africa. The opening address was given by Peter Cross, Project Leader Mechanical Engineering at the South African Bureau of Standards (SABS), who highlighted national, regional and international dimensions of challenges in the field.

The subcommittee's work can reduce health care costs resulting from accidents and injuries.

The subcommittee's Chair, Wolfgang Drews, welcomed 30 delegates of SC 15, which promotes the effective use of International Standards and other deliverables by ensuring that they are globally relevant, high quality and easy to understand.

The collection of standards consist of:

- ISO/TS 16976-1:2007, *Respiratory protective devices – Human factors – Part 1: Metabolic rates and respiratory flow rates*

- ISO/TS 16976-2:2010, *Respiratory protective devices – Human factors – Part 2: Anthropometrics*
- ISO 16900-2:2009, *Respiratory protective devices – Methods of test and test equipment – Part 2: Determination of breathing resistance*
- ISO 16972:2010, *Respiratory protective devices – Terms, definitions, graphical symbols and units of measurement.*

The work of SC 15 will proceed with great determination in coming years. Future standards work will consist of performance requirements for respiratory protective devices according to their classes. These performance requirements are based on human factors and reflect the entire RPD-system. A complete set of RPD performance standards is scheduled for finalization in 2014, removing several technical barriers to trade. ■

About the authors



Wolfgang Drews is a Performance Development Executive (PDE) at Draeger Safety, in Luebeck, Germany. He has more than 30 years' experience in the field of personal protection equipment

and has spent the last 15 years in standards development at the European Committee for Standardization (CEN) and ISO. Mr. Drews is Chair of ISO technical committee ISO/TC 94, *Personal safety – Protective clothing and equipment*, subcommittee SC 15, *Respiratory protective devices*.



Dr. Hans-Peter Keller is a staff member of the German Standardization Institute (DIN) with more than 20 years' experience in international

standardization. He served as secretary of several committees at the national, European and international levels. In 2010, he was appointed Secretary of ISO/TC 94/SC 15. Dr. Keller has university degrees in electrical engineering and physics.



Fair and transparent

Construction procurement

by Elizabeth Gasiorowski-Denis

A new series of ISO standards offers the international construction industry practical tools to ensure fair competition, reduce the possibility of abuse and improve predictability in procurement outcomes.

The ISO 10845 series of standards for construction procurement, which consists of eight parts, will help organizations establish a procurement system that is fair, equitable, transparent, competitive and cost-effective. These International Standards are designed to help public, private and international organizations and their main contractors to align their procurement systems with international best practice.

Procurement is the process through which contracts are created, managed and fulfilled. It involves all the steps from the identification of the project or products to be procured, to soliciting and evaluating tender offers, to awarding and administering contracts and confirming compliance with requirements.

The first part of the series, ISO 10845-1:2010, describes processes for developing a procurement system, and provides rules and guidelines relating to standard procurement methods and procedures. It also gives a framework for developing a procurement policy and establishes the manner in which procurement is to be managed and controlled. The remaining seven parts, which have just

been published, relate to specific aspects of procurement.

ISO 10845-2:2011 establishes a standard format for calls for expressions of interest, for tender and contract documents, and the general principles for compiling procurement documents for supply, services and engineering and construction works contracts, at both main and subcontract levels. It provides the platform for the standardization of component documents and improved communications between those engaged in the procurement process.

Part 2 of ISO 10845 can be applied in procurement documents which make use of international forms of contract such as the FIDIC and NEC3 contracts published by the International Federation of Consulting Engineers (FIDIC) and the Institution of Civil Engineers, respectively.

ISO 10845-3:2011 contains standard conditions of tender. It establishes what a tenderer is required to do in order to submit a compliant tender, makes known the evaluation criteria to tenderers, and establishes the manner in which the procuring entity

conducts the processes of offer and acceptance, and provides feedback to tenderers on the outcomes of the process.

ISO 10845-4:2011 contains standard conditions for calling for expressions of interest. This includes what is required for a respondent to submit a compliant submission, makes known to respondents the evaluation criteria, and the manner in which the procuring entity conducts the process of calling for expressions of interest and evaluates submissions.

Parts 5 to 8 of ISO 10845 establish key performance indicators (KPIs) to measure the outcomes of a contract in relation to the engagement of targeted enterprises, joint venture partners, local resources and local labour and to establish a target level or minimum performance criteria for a contractor to achieve or exceed in the performance of a contract. These standards enable a procurement system to respond to aspects of sustainable development in a meaningful and measureable way.

Improve quality

Dr. Ron Watermeyer, project leader of the ISO 10845 series, says, "This series will be an invaluable tool for promoting international trade, in particular for developing countries who may lack experience and instruments in this field. The various parts of ISO 10845 can readily be incorporated into procurement systems by reference in policy or in legislation. Parts 3 and 4 can be readily incorporated into procurement documents by reference.

"These standards can help those engaged in procurement activities to better perform their duties. They will help promote a uniform procurement system and improve the quality of procurement documents. Its standard processes, procedures and methods can also serve as a basis for developing consistent curricula for education in procurement and form the basis for capacity-building needed to procure much needed infrastructure, particularly in developing countries".

The new standards were developed by ISO technical committee ISO/TC 59, *Buildings and civil engineering works*.

The ISO 10845-1 series are available from ISO national member institutes (see complete list on www.iso.org) and from ISO Central Secretariat through the ISO Store or by contacting the Marketing & Communication department (sales@iso.org). ■

Elizabeth Gasiorowski-Denis is Editor of *ISO Focus+*.



Radiation exposure

New ISO standard will improve protection of workers



by Sandrine Tranchard

A new ISO standard will help optimize individual monitoring and protection of workers exposed to radiation. It will also provide the technical basis for reinforcing regulation in this field worldwide.

The application of ISO 27048:2011, *Radiation protection – Dose assessment for the monitoring of workers for internal radiation exposure*, will contribute to more reliable and consistent results when measuring internal doses of radioactive substances.

Many workers are indeed exposed, often in varying degrees and circumstances, to ionizing radiation. Therefore, people who are occupationally exposed to ionizing radiation receive increased health surveillance and monitoring. For workers exposed to radioactivity which may enter the body via inhalation, ingestion or the skin, a comprehensive monitoring programme is needed; such a programme consists in measurements of body activities and excretion rates via urine or feces.

The quantitative interpretation of such measurements requires well-defined models and data describing the behaviour of radioactive substances in the human body. Various comparative studies have revealed that, in spite of the availability of scientific support in the form of International Atomic

Energy Agency (IAEA) and International Commission on Radiological Protection (ICRP) recommendations, the actual application of identical models and data by different laboratories often results in dose assessments differing by orders of magnitude.

There is, therefore, a need to lay down standard procedures for assessing internal doses using exposure data, in order to achieve consistency and reliability in the assessment of doses. ISO 27048:2011 should:

- Improve the reproducibility of dose assessments
- Ensure that the level of effort required for data interpretation is commensurate with the seriousness of the exposure
- Enable the exchange of consistent dosimetric information among laboratories and authorities, including across international borders.

This International Standard specifies the minimum requirements for the evaluation of data from the monitoring of workers and

presents procedures and assumptions for the standardized interpretation of monitoring data, in order to achieve acceptable levels of reliability. Those procedures allow the quantification of radiation exposures for the documentation of compliance with regulations and radiation protection programmes.

ISO 27048:2011 will be very useful in interpreting data and assessing the reliability of results and will thus help improve the protection of workers through better knowledge of internal doses of radioactive substances.

This International Standard is one of a series of three standards which together form a complete and consistent system regulating the complex issue of monitoring workers for potential incorporations (measurement programmes, requirements for laboratories, quantitative assessment of exposures).

ISO 27048 was prepared by ISO technical committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 2, *Radiological protection* and is available from ISO national member institutes (see complete list on www.iso.org) and from ISO Central Secretariat through the ISO Store or by contacting the Marketing & Communication department (sales@iso.org). ■

Sandrine Tranchard is a Communication Officer, ISO Central Secretariat.



Energy

At a time when the projected availability of oil reserves can be measured in decades, and with current supplies vulnerable to disruption, the international community is exploring alternative energy options, and encouraging conservation.

According to the International Energy Agency, the energy sector will have to play the central role in curbing carbon emissions – through major improvements in efficiency and increased use of renewables and other low-carbon technologies. As in many other fields, International Standards have made, and will increasingly make, an important contribution.

Energy efficiency is ISO's primary focus in the energy field today, because it represents by far the most relevant, shorter time frame and lower investment line of action able to curb global energy demand and reduce carbon emissions. ISO is also increasingly working on standards for renewable energy sources, with a view to respond and possibly to anticipate market and society needs in this field.

To this end, the May 2011 *ISO Focus+* issue will look at the theme of energy. This month's dossier hones in on what ISO is doing to preserve the environment, and why standards are first-rate tools to help meet the international clean energy and climate change challenges. It will weigh up arguments for and against different energy sources, assess their effect on the environment and consider viable options.

The issue brings together a portfolio of articles from a diverse range of subjects: electric cars, energy efficiency of buildings, energy management systems (the future ISO 50001), general energy terminology and the carbon footprint standard (the future ISO 14067). It also looks at standards for renewables, such as wind, solar and biofuels, and how they help contribute to a healthier, more sustainable planet.

Last, but not least, new ISO committees dealing with energy-related issues such as sustainability criteria for bioenergy, energy savings and energy efficiency of industrial furnaces will also be highlighted. ■

Management solutions ISO 22000 on the menu

The Crown Group, a leading United Kingdom-based provider of food, venue and event solutions, has achieved certification to ISO 22000:2005, *Food safety management systems – Requirements for any organization in the food chain*, in recognition of its ability to control food safety hazards and ensure that food is safe for human consumption.

With ISO 22000 implementation, the organization now holds certification to four management standards, including ISO 9001, ISO 14001 and OHSAS 18001, in a system that now integrates quality, environmental, food safety and occupational health and safety management.

ISO Focus+ asked Karl Wilkinson, Safety and Assurance Manager for the Crown Group, to explain how his company integrated all four management systems, and what benefits have been achieved. ■



ISO Focus+

ISO Focus+ is available online. Readers can access *ISO Focus+* directly in their browsers at www.iso.org/isofocus+online. Subscribers can also search and browse past issues of *ISO Focus+*, as well as of the magazine's predecessors *ISO Focus* and *ISO Management Systems*. Bonus articles are also published on the Website.



ISO Update

The *ISO Update*, a monthly supplement to *ISO Focus+* is available electronically (PDF) in both English www.iso.org/isoupdate and French www.iso.org/fr/isoupdate.



The *ISO Update* informs about the latest developments in the ISO world, including ISO member bodies' CEO and address changes, draft standards under circulation, as well as newly published, confirmed or withdrawn standards. It also includes a list of upcoming technical committee plenary meetings.





Photo : © Lionel Egger

Wouldn't it
be great
to feel strong,
calm,
ready
for
anything?

ISO has standards that can help.

We've all met managers who like to pass themselves off as "real tigers". But bluster can often be a mask for a lack of confidence. Real confidence comes from knowing you have done all in your power to prepare your organization for anything that an uncertain world can throw at it. And the power of confidence can be developed by implementing the ISO 31000 series for risk management. These standards enable organizations of all types and sizes, in both public and

private sectors, to manage risk effectively. They can make all the difference between paper tigers and the real thing.

ISO 31000:2009, *Risk management – Principles and guidelines*

ISO Guide 73:2009, *Risk management – Vocabulary*

ISO/IEC 31010, *Risk management – Risk assessment techniques*

Available from ISO national member institutes (listed with contact details on the ISO Website at www.iso.org) and from the ISO Central Secretariat Webstore at www.iso.org/isostore or e-mail to sales@iso.org.

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