Medair CEO: “Our teams rely on International Standards”

Orange Business Services and ISO/IEC 20000
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The recent sinking by the US Coast Guard in the Gulf of Alaska of a drifting ship, a Japanese fishing vessel unmoored by the tsunami caused by 2011’s Great East Japan earthquake, coincided with the first anniversary of the event which devastated my home country. The ship was a haunting reminder of the tragedy Mother Nature (and man) have wrought on our planet in recent years. The human, economic, social and environmental consequences are incalculable and will burden our communities for decades to come.

In 2010 alone, a volcano in Iceland played havoc with air travel; massive earthquakes in Chile, Indonesia and New Zealand caused hundreds of casualties and widespread damage. Haiti was hit by a killer earthquake (which destroyed infrastructure and led to polluted water supplies and a cholera outbreak), and by flood waters generated by Hurricane Tomas. Conflicting estimates of the death toll range from 200,000 to over 300,000 Haitian lives some 150,000 people are still missing.

The world was riveted by the spectacle of the desperate (and ultimately successful) attempt to save the lives of 33 miners in Chile following a cave-in (due to poorly maintained mine structures). And then, on 11 March 2011, the most powerful earthquake ever to hit Japan, a magnitude 9.0 undersea megathrust earthquake, struck off the coast of Tohoku and a chain reaction was set off. Tsunami waves were triggered, reaching heights up to 40 metres, some travelling up to 10 km inland. After the earthquake, three of the reactors at the Fukushima Dai-ichi nuclear power plant experienced meltdown, and several hydrogen explosions occurred.

Almost 170,000 people lost their lives in what became the natural disaster causing the greatest economic loss in history (according to the World Bank). A year later, thousands are still missing. 2011 had not finished execting its cruel toll on Asia. Following severe monsoon flooding in Thailand that took the lives of more than 800 people, “Washu”, a late-season tropical cyclone, resulted in over 1 200 fatalities in the Philippines.

ISO standards help handle incident response in a crisis.

When disaster strikes, it is already too late to put together a system of response. The ultimate purpose of emergency management is to save lives, preserve the environment and protect the property and the economy. Emergency management is comprised of interdependent risk-based functions: preparedness, prevention, mitigation, response and recovery.

ISO, in cooperation with international organizations, associations, governments, business, manufacturing, academia and consumer groups, is working to develop effective standards to prepare and respond to emergencies.

ISO International Standards are valuable, capacity-building tools. They outline global best practice to establish command centres, oversee organizational structures and procedures, support decision making and promote traceability and information management.

In the midst of disaster, harmonized international guidance such as that provided by ISO standards is essential. Response following an incident might include the participation of public and private organizations working at the international, national and regional levels. Coordinating efforts helps to ensure that action is effective, and that all relevant parties are kept updated. This minimizes the risk of misunderstanding and ensures a more effective use of combined resources.

ISO standards help ensure timely, relevant and accurate operational information by specifying process, systems of work, data capture and management.

ISO standards help to reduce impact and risk through proactive measures taken before an emergency occurs. They provide criteria for the establishment and the implementation of actions that will mitigate the consequences of natural or accidental disasters.

International Standards encourage community participation in the development and implementation of incident response measures, to ensure that a response is not only tailored to the needs of the affected population, but also culturally appropriate. Catastrophes will always happen, but I hope ISO standards will increasingly help to mitigate impact and better prepare the world’s citizens to manage emergencies, improve coordination and cooperation to ensure that precious time is not lost when disaster strikes.
Measuring everything

“Quantities and units enable every aspect of our lives. Without the metric system contained in International Standards, a whole range of activities, from shopping at the supermarket to industrial production, to scientific research, to international trade, would be at best extremely haphazard,” says ISO Secretary-General Rob Steele in the foreword of the latest edition of Metric Standards for Worldwide Manufacturing.

Weights and measures have been fundamental to commerce, production and technology since ancient times. The Treaty of the Metre in 1875 laid the basis for today’s international metric system – the SI International Standards maintain the science of measurement at the state of the art and help create confidence in products and services.

Today, the international metric system is defined in International Standards developed by ISO technical committee ISO/TC 12 and the International Electrotechnical Commission’s IEC/TC 25, both of which are entitled Quantities and units. In 2009, ISO and IEC completed a new, harmonized, International Standard, with the ISO and IEC designation 80001, Quantities and units, with 14 parts.

The metric system is subject to continual improvement. Recent developments include telebiometrics, which increases the reliability of biometric data, used extensively in security applications.

Rob Steele concludes, “The metric system defined in International Standards is indispensable for manufacturing in a world networked by global supply chains. Metric Standards for Worldwide Manufacturing will be extremely useful for engineers, scientists, technical writers, teachers and students.”

How much life in the sea?

Fishing, shipping, tourism and other human activities are having disastrous consequences on marine biodiversity.

Some species have become extinct and it is estimated that between 30% to 35% of critical maritime habitats such as seagrasses, mangroves and coral reefs have been destroyed. The Convention on Biological Diversity aims to protect this rich heritage. Marine biodiversity is therefore the theme of the 2012 International Day for Biological Diversity (IDB) held on 22 May. The event is an opportunity to raise awareness and take action.

The ocean covers 71% of the surface area of the globe, and constitutes over 90% of the habitable space on the planet. From 2000 to 2010, an unprecedented worldwide collaboration by scientists around the world set out to try and determine how much life is in the sea. Known as the “census of marine life”, it involved 2,700 scientists from over 80 countries, participating in 540 expeditions around the world.

Although scientists are still working through the results, it is believed an estimated 250,000 species inhabit the ocean, though the census team suggested it could be at least a million. Some think the figure could be twice as high.

ISO standards for environmental management, maritime environmental protection, fisheries and aquacultures can help. Examples include standards for risk assessment of anti-fouling in ships, oil spill responses, environmental monitoring of fish farms’ impact, and fish-in-fish-out ratios, to name a few.

Together for food safety

Advancing global food safety through collaboration was the theme of the 2012 Global Food Safety Conference, which brought together more than 900 leading food safety experts and decision makers from over 50 countries, in Orlando, USA.

Some food safety and management of service activities are having disastrous consequences on marine biodiversity. This year’s conference was the largest and most successful yet. Attendees represented the whole spectrum of the supply chain including growers, manufacturers and retailers, along with public and private entities and both international and local stakeholder organizations.

A series of videos were prepared for the conference featuring various key stakeholders in the industry, including ISO.

“I think we are only starting the journey towards safety right now,” said ISO Deputy Secretary-General, Kevin McKinley. “We are getting global, and we are bridging public and private sectors much better than we ever have. Use of standards like ISO 22000 on food safety is growing every year in leaps and bounds, and people are seeing the benefits of finally having one consistent approach for managing food safety in their organizations that is becoming more and more accepted. So I think this is just the start.”

Watch the videos: www.youtube.com/ FoodSafetyConference

World Water Forum

ISO solutions to vital water challenges were at the heart of a workshop held in March 2012 in conjunction with the 6th World Water Forum (WWF), in Marseille, France.

“People are seeing the benefits of finally having one consistent approach for managing food safety in their organizations that is becoming more and more accepted. So I think this is just the start.”

WWF mobilizes creativity, innovation, competence and know-how in favour of water. It gathers all stakeholders around today’s local, regional and global issues to tackle the challenges we face. The forum’s work is facing and to push water high on all political agendas. More than 35,000 participants attended the event.

The workshop, “How can ISO standards address global water challenges?”, focused on ISO’s tools for the assessment, improvement and management of service activities for drinking water and wastewater systems and for asset management, which can help water authorities and operators meet the expectations of consumers and the principles of sustainable development.

It also looked at water management during crisis conditions, and at ISO’s most recent work on the reuse of treated wastewater for irrigation, which aims to prevent any adverse impacts on public health and the environment.

The workshop was organized by ISO and facilitated by AFNOR (ISO member for France).

Jim Ingram

Medair

Jim Ingram was appointed Medair CEO in June 2011. Mr. Ingram was raised in Ontario, Canada, where he spent nine years in university, getting a number of degrees. His studies included mathematics, computer science, economics, and philosophy. He spent some time working for the Canadian Government before beginning his career at L’Abri Fellowship Foundation in Switzerland. From 1980 until 2003, he worked at L’Abri as a teacher, counsellor, treasurer, and as director. For 15 years, he was the Executive Director of Swiss L’Abri. He was the trustee of six L’Abri foundations around the world, and was instrumental in opening a branch in his home country.

In 2004, Jim began working for Medair and he has been an integral part of the organization ever since. He has served as Director of Finance, Interim CEO, and as a key voice on the Executive Leadership Team (ELT). As a member of the ELT, he has been involved in all the major decisions about Medair’s mission and its implementation.
Medair has been certified to ISO 9001 since 2001. Could you please explain why a quality management system is important for Medair. What added value does it bring your association?

Jim Ingram: First and foremost, Medair has always been focused on and committed to the people we serve and work alongside of, our beneficiaries. Medair has embraced quality since we were founded in 1988. Quality at Medair has three dimensions: satisfying the needs of our beneficiaries; professionalism in how we work; and a constant focus on improvement.

Medair’s work has made a profound difference for millions of people.

Medair made a strategic decision in 2000 to demonstrate a commitment to quality and our beneficiaries by putting in place a quality management system (QMS) based on ISO 9001. When Medair achieved the ISO 9001:2000 quality certification, we named the beneficiaries as the primary stakeholder or “customer” of Medair humanitarian activities. Our QMS helps keep our beneficiaries central to our mandate. Quality is about performance to standard and continuous improvement. At Medair, we strive to do this by following a disciplined cycle of planning, doing, evaluating and improving – using input from our beneficiaries, donors, and staff to help us better respond to changes in our operating environment.

Our certification brings added value by providing a solid framework and an adaptable context for planning our humanitarian interventions, setting standards and indicators, measuring our performance against those indicators and adjusting our activities when necessary.

ISO Focus+: How has it evolved over the years? What added value does it bring your association?

Jim Ingram: Our QMS is dynamic and seeks to promote a culture of improvement. Today, we actually speak less of the certification. That is because over the years, we have incorporated the ISO QMS principles into a Medair organizational management system, adapting the ISO standards to meet our internal requirements, while remaining aligned with external, internationally recognized standards of practice.

For example, we recently reviewed procedures in our QMS to better identify internal control points and related risks. These improvements contributed to successful audits of our internal control system, which were conducted as part of relatively new requirements for Swiss non-profit organizations to demonstrate operational control systems.

From a strategic perspective, we looked at lessons learned from our emergency response in Haiti in 2010, and are developing our capacity for a more rapid and improved response through a dedicated emergency response team at headquarters.

At the same time, Medair continues to address emergencies as part of our ongoing programming in the health, nutrition and water/sanitation/hygiene (WASH) sectors, through outbreak preparedness including pre-positioning of supplies, training and capacity building of local staff.

Our QMS helps keep our beneficiaries central to our mandate.

Our certification is worldwide and encompasses our field operations, headquarters and affiliate offices. Medair is fully committed to quality in our work from field activities in remote and hard-to-reach places, to senior management and our International Board of Trustees.

ISO Focus+: Medair implements a wide variety of relief and rehabilitation projects in disaster, and conflict areas, ranging from sanitation to shelter, to water, in countries such as Afghanistan, D.R. Congo, Haiti, Madagascar, Somalia, Sudan, South Sudan and Zimbabwe – how do International Standards help you in such diverse situations?

Jim Ingram: We provide relief and recovery/rehabilitation in response to sudden natural disasters, like the 2010 earthquake in Haiti, to slower onset emergencies such as the drought in the Horn of Africa last year, and to people in need because of conflicts, as in the Democratic Republic of Congo and South Sudan. The nature of each crisis or emergency leaves people affected in different ways, which means our response must adapt to these specific needs.

The first step in any response is to identify the people who are most vulnerable and affected and then decide on how we will intervene. To do this, our programming, logistics and technical advisory teams
clearly established processes and emergency protocols in place across Medair to be able to execute rapidly once we make the decision to intervene. Here again, International Standards provide a framework for having in place the processes and protocols we need to execute with quality and deliver aid to our beneficiaries.

ISO Focus+: On your Website, you say: “We are focused on using our funds with integrity, ensuring maximum efficiency and accountability for all our programmes”. How does certification affect your fundraising efforts vis-à-vis institutional and private donors?

Jim Ingram: Quality is intrinsically linked to two of our core values – accountability and integrity. We are committed to employ best practices in our management and operations, pursuing excellence in all we do. Funding partners, both public and private, entrust us with their money. They expect effectiveness and professionalism. We are accountable to them for what we do with it and we seek to provide a clear and accurate account of what we have done in relation to what we said we would do, regardless of the amount of the donation.

Medair’s funding comes in large part from institutional donors. They have rigorous requirements for reporting on how we use their funds – as they should. We have seen a steady increase in the number of required audits at various stages of our projects. Within our QMS, we have established systems that allow us to meet their reporting requirements and have mechanisms in place to follow-up on the audit recommendations.

While certification is not a goal in itself, it can be an indicator to a donor that Medair can be trusted, because it signifies that we are proactively engaged in ensuring the best possible results with the money entrusted to us. ISO 9001 is just one certification that is relevant for us. Private donors in Switzerland, where we are based, are familiar with and trust the ZEWO label and what it represents in our fundraising practices.

ISO Focus+: What are your expectations and needs for future ISO standards?

Jim Ingram: Medair chose the route of the ISO 9001 certification before many of the major humanitarian quality and accountability initiatives and standards were developed, and used as they are today. We adapted the ISO standards to our context. However, there are now dedicated standards to help the humanitarian community improve accountability, quality and performance in humanitarian action. Key groups such as the Sphere Project, People-In-Aid and HAP (Humanitarian Accountability Partnership) and ALNAP (Active Learning Network for Accountability and Performance in Humanitarian Action) are seeking how to work even more closely together in this area.

ISO 26000 is relevant for humanitarian organizations like Medair.

Any ISO work to further the development of internationally accepted parameters in the non-profit sector should contribute to recognized standards and initiatives, not duplication. ISO management system standards can continue to be a framework for implementing processes and operating principles to achieve those standards. Some adaptation, however, is required to fit non-profit organizations, as Medair has done and will continue to do.

Another important work item that ISO can develop will be continued guidance around social responsibility, a topic that is getting a lot of attention these days. From our donors to the beneficiaries we serve, our stakeholders have expectations regarding our actions toward social responsibility. The core subjects of ISO 26000:2010, Guidance on social responsibility – human rights, labour practices, the environment, fair operating practices, consumer issues and community involvement and development – are plainly relevant for humanitarian organizations like Medair.

ISO Focus+ May 2012

ISO Focus+ May 2012

ISO Focus+ May 2012
On 11 April 2012, a powerful earthquake with a magnitude of 8.6 struck off the Indonesian island of Sumatra. Lessons had been learned in the aftermath of the December 2004 earthquake (with a magnitude of 9.0) that had generated cataclysmic tsunamis and resulted in 230,000 deaths.

Back in 2004, there were no sea-level monitoring instruments in the Indian Ocean. But by April 2012, a large network of seismographic centres, coastal and deep-ocean stations had been created to detect potential tsunamis. Centres issue watches, if necessary, to national bodies in the region. It is then the responsibility of each national agency to alert its population, by whatever means they have at their disposal.

This time, warnings of the threat of a tsunami could be broadcast across the Indian Ocean in real time. Thankfully, a tsunami never materialized, but the system had shown that it worked, giving safeguards for the future.

That such a sophisticated, early-warning system had come into being in the wake of the 26 December 2004 was due to a colossal, multinational effort spearheaded by the Intergovernmental Oceanographic Commission. The speed of transmission of information had to be accelerated if real-time warnings were to become reality.

Earthquakes, tornadoes, tsunamis, hurricanes, wildfires that burn out of control, floods that wash away human lives and property: add to those natural disasters the ones man creates intentionally (criminal acts, terrorism) and unintentionally through accidents, negligence, a lack of preparedness for unexpectedly catastrophic circumstances (a tsunami invading a nuclear reactor and leading to equipment failures, a nuclear meltdown and the release of radioactive materials). Managing the aftermath of these crises is a huge task, but preparedness is the key to limiting the toll that must be paid.

The theme of this Special Report addresses crisis management and features articles on how International Standards protect and support stakeholders involved in preparing for, and managing, emergencies. Topics range from keeping the water supply clean to the safe maintenance of nuclear reactors, how to manage risk and IT preparedness for business continuity and disaster recovery. An article also outlines global best practices for establishing an incident response system contained in a new emergency management standard, helping both the public and private sectors to prepare and implement an effective incident response.

This issue also presents examples of lessons learned in the aftermath of disasters in Japan and New Zealand, to illustrate how International Standards can help in the management of crises, their consequences and put communities, countries and the world on the road to recovery.

Whatever the issue that might arise prior to, during, and after a disaster, ISO has many essential roles to play. The following pages showcase a handful of such examples and how ISO standards are valuable, capability-building tools in handling incident response to any crisis.

Sandrine Tranchard is a Communication Officer, ISO Central Secretariat.
Managing disruptions in emergency situations

by Kevin W. Knight AM*

Effective responses to a frequently wide range of disruption-related risks require a concerted approach to the management of emergency preparedness.

This can be achieved by applying ISO 31000:2009, Risk management – Principles and guidelines, to the development of emergency preparedness plans and processes. Disruption-related risks are a result of natural, biological, technological, industrial and other human activities, and can lead to significant social and economic costs for individuals, organizations, municipalities, regions and countries.

Specific effects include: damage to property, infrastructure and facilities; financial costs and indirect economic losses; fatalities, injuries and illness; impairment of ecosystems and loss of biodiversity; and social and cultural losses.

To respond effectively to these challenges, effective emergency preparedness plans must:

- Understand what the body developing the plan must achieve – the critical objectives
- Identify possible barriers or interruptions in trying to achieve these objectives
- Test and measure the probable outcome of controls and other mitigation strategies (identifying and quantifying residual risk)
- Determine how the organization will continue to achieve these objectives should additional disruption-related risks occur.

If these key aspects apply to all private and public organizations required to develop an emergency preparedness programme. With little modification, these same aspects can be applied to address the needs of even the smallest organization or municipality. There is no need to approach emergency preparedness as a monolithic programme. More than solely the writing of a plan, emergency preparedness is an organization’s proactive provision of resources to ensure that critical societal or business objectives continue to be met in the face of any disruption-related risk.

There are sound practical, social and economic reasons for having such an approach to the conduct of emergency risk assessments. These include:

- Improving the understanding of emergency risk issues and ensuring that risk treatment measures provide a sound return on investment in terms of knowledge, skills and resources (for example, capital, time, people, processes, systems and technologies)
- Standardizing risk assessments and the development of alternative risk reduction proposals so that all involved speak the same language of risk
- Increasing transparency so that assessment processes can be followed easily, checked or modified in the light of improved knowledge or information
- Improving consistency to allow meaningful comparisons between different disruption-related risks.

To meet the challenges of disruption-related risks, the above objectives must be addressed in the development of emergency preparedness plans. In this way, individual, organizational, municipal, regional, national and global needs can be met.

Understanding risk

To achieve these goals, responsible organizations should develop an appropriately contextualized emergency risk assessment methodology consistent with ISO 31000. Given the complexity and severity of possible outcomes as a result of emergency events, the guidelines need to generate an integrated, comprehensive and objective understanding of emergency risks. This will inform the emergency preparedness plans required.

Outputs from risk assessments undertaken using the resultant methodology must seek to improve decision making about the allocation of scarce resources for risk treatment and emergency preparedness plans and procedures. The emergency risk assessment methodology developed must be scalable, capable of being used for assessing emergency risks arising from any hazard and able to be used from an individual to a global level. Depending on the context of its application, any study conducted using the methodology will necessarily focus on particular hazards of significance and impact for the community in question.

There is no need to address the entire risk management framework or the risk management process as outlined in ISO 31000. However, because the focus is on the assessment of risks from emergency events, the management of emergency risks is directed towards, and in line with, International Standards for risk management.

The resulting document should produce a risk assessment methodology that:

- Facilitates a focus on risks in small (e.g., organizational or municipal) or large (regional and/or national and/or global) areas
- Is useable for both risk from and risk to (e.g., risk from flood, typhoon, tsunami and wildfire; and risk to buildings or infrastructure from all or specific sources of disruption-related risk)
- Uses a scenario-based approach
- Samples risk across a range of credible consequence levels

Not all emergency events are caused by nature.

The methodology needs to focus on emergency events and be concerned with the risk assessment of events that require the development of effective emergency preparedness plans. Although the focus should not be on risk management, risk mitigation or addressing business continuity processes and practices, these can benefit from the methodology’s outputs.
Identifies current risk under existing controls, and residual risk assuming implementation of additional controls or control improvements

Provides base-line qualitative risk assessments and triggers for more detailed analysis

Allows risk evaluation at varying levels of confidence

Provides comparable outputs which rate risk and suggest ways to reduce risk.

Applicable to all emergencies

In many jurisdictions, emergency preparedness planning focuses on the sudden onset of natural hazards. These include earthquake, flood, storm, hurricane, storm surge, debris flow, tsunami and wildfire. Of course, not all emergency events are caused by nature. However, consequences from emergency events may be similar, regardless of the trigger involved. It is therefore imperative that the final document adopt an all-hazards approach and provides a method that is suitable for considering other sources of risk. These include disease (human, animal and plant), insect/vermin plague, and those risks arising from technological and other human sources, unless specific risk assessment techniques have been developed for the detailed analysis of particular hazards.

Outputs from risk assessments must seek to improve decision making.

ISO 31000 states that the success of risk management depends on “…the effectiveness of the management framework providing the foundations and arrangements that will embed it throughout the organization at all levels.”

An appropriate methodology ensures that information on disruption-related risks will be adequately reported and used at relevant levels in decision making with respect to emergencies and the development of effective emergency preparedness plans. These are to protect individuals, organizations, municipalities, regions and countries, and are also applicable globally, as required. It ensures that those charged with developing, testing and implementing emergency preparedness plans have the required mandate and commitment from top management to facilitate their activities.

Defining scope

The scope of the risk assessment needs to be adequately considered to define the required data. Because the management of risks from emergencies could involve multiple hazards, the definition of scope must address the range of hazards for a single event or multiple events, the relevant community including its geographical or jurisdictional boundaries, and relevant timelines. Accordingly, consideration needs to be given to determine: the emergency event(s); the sources of risk (describing the hazards); and the impact categories (describing the elements at risk).

Consideration may also be given to the fact that emergencies can have beneficial long-term consequences for the relevant community, which might (partially) offset immediate or short-term detrimental impacts. Also, consequences beyond the regional jurisdiction of concern may increase or reduce those within the region. In general, any issue raised during the risk identification process – including concerns – can be considered, captured in the risk register and assessed through to the risk evaluation. Above all, effective emergency preparedness requires a fundamental cultural change in a society or organization, including an acceptance of uncertainty and imperfection. People and organizations need to appreciate that risk is inherent in every decision and activity, and that part of this risk has the potential to create disruption. As a result, they need to consider how they will manage any resultant disruptions to their activities. There is no single solution for engendering the required cultural change, although appropriate communication certainly helps to achieve success.

About the author

Kevin W. Knight

AM is Chair of ISO/PC 262, Risk management, and was Convener of the ISO working group responsible for ISO 31000:2009.

The result of a need for a standard based on international experience, ISO 22320 outlines global best practice for establishing an incident response system. While it does not touch on legal regulation, it defines minimum requirements for the single- and multi-organizational collaboration of parties involved in preparing and implementing effective incident responses.

Emergency management explained

“Emergency management” can be defined differently according to the language, nationality, organization or legal regulations involved. For ISO 22320, emergency management is the overall approach for preventing and managing emergencies. As shown in Figure 1, emergency management consists of all three phases of a disruptive event (before, during and after) and various activities.

Incident response comprises actions to stop the consequences of an imminent hazard, and/or mitigate the consequences of destabilizing or disruptive events, and/or recover. These events include natural disasters, terrorist threats, poor IT security or an industrial fire disrupting the product chain. The main activities of an incident response are:

• Warning, alerting and activation of incident response
• Command and control, information, coordination and cooperation
• The response to the incident to save lives and mitigate negative effects.

The warning of the population at risk is a key part of incident response. An ISO standard currently in development, ISO 22322, Societal security – Emergency management – Public warning, will cover this.

“Command and control” has its origin in military and police terminology. It is now a more generic term for target-oriented…

Emergency management

Global best practice for an incident response system

by Ernst-Peter Döbbeling

In the public and private sectors, a key task is minimizing the impact of the disasters and crises that follow natural, negligent or intentional incidents. When major incidents occur, they regularly demonstrate the importance of an effective response. Fortunately, ISO 22320:2011, Societal security – Emergency management – Requirements for incident response, enables organizations to respond efficiently and effectively.

At first it might be surprising to see the publication of an International Standard for incident response. This is because emergency management is widely seen as a matter for public or governmental organizations operating within a legal framework. But today, incident response has become a broader multi-organizational, multinational concern in which private and public actors collaborate. Following business continuity analysis, many companies have identified the requirement for a response system.

Figure 1: Phases of emergency management.
ISO 22320 applies to all private- and public-sector organizations.

Another process in energy management is coordination. Often, many organizations have to respond to an incident and interact. For example, public emergency services interact with private industry services, industry interacts with energy or water suppliers, and police interact with fire and ambulance services. Each organization has its own line of hierarchy, command and information. Coordination is the way in which such different organizations work together to achieve a common objective. The challenge is to integrate individual responses to achieve synergy to the extent that the incident response has a unified objective and a consensus decision-making process. Without coordination, organizations have difficulties in identifying a common incident response goal and accepting strategic implementation.

ISO 22320 lays out the principles for a multi-organizational command and control process with an enhanced need for coordination and information sharing, as shown in Figure 4. Following a best-praxis analysis, effective coordination is shown for the:

- Setting of boundaries (geographical and areas of responsibility) between the different organizations
- Interoperability of communication, geographic and information management networks
- Identification of common and transparent decision-making procedures
- Implementation of an information sharing and situational awareness policy
- Implementation of a communication flow plan and communication guidelines
- Division of operational tasks

Cooperation has to be assessed, prepared, established, and tested in advance on the basis of risk analysis. This facilitates opportunities for effective and economical incident response planning. Cooperation can reduce or share costs and improve business continuity and recovery.

Benefits to all

ISO 22320 applies to all the private- and public-sector organizations that can be involved in incident response. An organization can use this standard to identify its individual performance requirements and organize decision making in crises when normal hierarchical decision making is interrupted.

A good reaction to disruptive situations is driven essentially by information availability and information exchange. The standard outlines the information process and the relevant quality criteria. In incident response today, collaboration between organizations, companies or governments is based on coordination, cooperation and public-private partnership. In many countries, the hierarchical structure is still the only way of handling incident response in emergency management. For them, this standard presents a wider view for preparedness in incident response.

For developing countries, this standard is a neutral best-praxis document for planning and implementing a complete, well-structured incident response system. An ISO standard-based incident response system offers the opportunity for trans-border collaboration. It also facilitates good incident response coordination between governmental organizations and industry.

About the author

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Figure 2: Example of the command and control process in a single hierarchical organization with limited coordination needs.

Figure 3: The process of providing operational information.

Figure 4: Circular chart for a multiple hierarchical command and control process with enhanced relevance of coordination.
Non-reactor nuclear facilities with operations, processes, storage, handling and on-site transport of significant quantities of fissionable materials are required to maintain a nuclear criticality safety (NCS) programme for the prevention of nuclear criticality accidents, in accordance with ISO 1709:1995, Nuclear energy – Fissile materials – Principles of criticality safety in storing, handling and processing. NCS programmes determine the need for nuclear criticality accident alarm systems.

An evaluation is performed for all activities having inventories of fissionable materials in individual unrelated areas exceeding 700 g of 233U, 520 g of 235U, 450 g of the fissile isotopes of plutonium or 450 g of any combination of these isotopes.

**Preparedness and response**

Implicit to the evaluated need for a nuclear criticality accident alarm system is the requirement for the implementation of emergency preparedness and response plans. In consideration of such a need, ISO 11320:2011, Nuclear criticality safety – Emergency preparedness and response, was developed. The new standard is designed to mitigate a nuclear criticality accident’s impact on human health and safety, quality of life, property and the environment.

Various ISO standards exist and are developing to assist facility NCS programmes in the prevention of nuclear criticality accidents.

**It is essential to respond quickly.**

Such NCS programmes are primarily directed at avoiding nuclear criticality accidents. However, the possibility of such accidents exists and the consequences can be life-threatening. For facilities that are judged to have a credible criticality accident risk, there is an expectation for advance planning, practice in planned emergency responses and verification of readiness.

The domain of NCS programmes at non-reactor nuclear facilities and activities is shown outside the red bounded areas in Figure 1. The activities of the unbounded areas include all operations and processing, storage, handling, and on-site transportation of fissionable materials before and after their use in nuclear reactors.

NCS analysis for the international transportation of fissionable material packages is required and governed by International Atomic Energy Agency (IAEA) Safety Standards (TS-R-1). Requirements for national and international transportation of fissionable material packages in the public domain provide for safety even under the most extreme conditions.

Apart from public transportation, the emergency preparedness and response to a criticality accident at non-reactor nuclear facilities processing significant quantities of fissionable materials lies elsewhere. It is generally under the purview of the national competent authority and the responsibility of the non-reactor nuclear facility performing fissionable material operations, processing, storage, handling and on-site transportation.

**Rapid response**

The emergency preparedness and response plan is required to minimize consequences due to a nuclear criticality accident. ISO 11320 therefore specifies...
A criticality accident emergency preparedness and response plan is vital.

Nuclear criticality accidents

Nuclear criticality results in the same reactions that occur in a nuclear reactor. The products of nuclear criticality are heat, radiation, and radioactive materials called fission products. Nuclear reactors are designed so that:

- Nuclear criticality is controlled and can be terminated
- Fission products are contained and managed to protect people from their radiation
- The heat produced may be beneficially used, for example to boil water, make steam, drive a generator and produce electricity
- Some of the radiation produced may be used to produce beneficial products such as medical isotopes or for research, but in all cases arrangements such as shielding are present to protect people from radiation.

Special nuclear materials must be handled and processed, often on an industrial scale, outside nuclear reactors. Industrial work with these special nuclear materials includes the manufacture of nuclear reactor fuel, chemical processing to concentrate, purify or change their form for various industrial applications, and various defence-related activities.

A prime consideration in the design, construction, and operation of industrial facilities to process special nuclear materials is the prevention of nuclear criticality. Unfortunately, if special nuclear materials are improperly handled outside a nuclear reactor, it is possible for a nuclear criticality accident to occur in the workplace.

The immediate result of a nuclear criticality accident is the production of an uncontrolled and unpredictable radiation source that can be harmful, even lethal, to people who are nearby. In the workplace, nuclear criticality accidents last from a fraction of a second up to several minutes, but may persist for much longer times, depending upon the specific conditions.

A nuclear criticality accident itself provides various mechanisms that tend to terminate the accident, and workplace personnel can also take actions to terminate persistent accidents. One accident that occurred in an experimental facility persisted for over six days before it was terminated by facility personnel.


definitions are made to protect people from their radiation exposure when exiting to predetermined emergency evacuation zones and emergency evacuation paths. This will help personnel to avoid unnecessary radiation exposure when exiting to predetermined emergency assembly stations.

If a nuclear criticality accident occurs at a nuclear facility, it is essential to respond quickly, and even more important to have prepared an emergency response. ISO 11320 provides criteria for establishing and implementing actions that will effectively mitigate a potential accident’s consequences for human health and safety, quality of life, property and the environment. Such emergency preparedness and response plans can also mitigate unnecessary public angst about the hazard and its limited impacts on operating personnel, facilities, the public and the environment in the rare event of a nuclear criticality accident.

About the author

Calvin M. Hopper

retired from the Oak Ridge National Laboratory in 2008 as a development and design engineer in ORNL’s Nuclear Science and Technology Division. Now, as a consultant for ORNL, he supports the US Department of Energy, US Nuclear Regulatory Commission and Oak Ridge Y-12 National Security Complex. Since 1995, he has participated in ISO/TC 85, Nuclear energy, nuclear technologies, and radiological protection, SC 5, Nuclear fuel cycle, WG 8 on nuclear criticality safety and is the group’s convener. He is overall advisor for ISO/TC 85/SC 5 of the American National Standards Institute (ANSI) Nuclear Technology Advisory Group, and has chaired the ANSI N16 Standards Consensus Committee on Nuclear Criticality Safety.

Are you vulnerable to an information and communication technology (ICT) cyber-attack, and would you cope if it happened?

If you are concerned, ISO and IEC have a solution.

ISO/IEC 27031:2011, Information technology – Security techniques – Guidelines for information and communication technology readiness for business continuity, can help any organization prepare for incidents, respond to security compromises and be less susceptible to disruption.

In the middle of the night, a hacker gains access to an organization’s servers. He disconnects 15 minutes later, taking 100 Gbyte of data and, in exchange, leaves a piece of malware. The next day the organization’s operations are in chaos. In another organization, it is mid-afternoon and a disgruntled employee decides he has had enough. He submits his letter of resignation, sabotages a server and goes home. His actions take immediate effect as the accounting system grinds to a halt.

How quickly can organizations get their systems up and running, minimize disruption and resume normal operations?

These and many other incidents are real, and can happen in any market sector. It is crucial that organizations know how to defend themselves against any security attacks and swiftly respond and recover any business systems to avoid longer-term damage and disruption.

Improved readiness

ISO/IEC 27031 helps organizations be prepared, respond to security compromises and lessen the effects of business disruption. It provides a framework of methods and processes to identify and specify all aspects (such as performance criteria, design and implementation) for improving an organization’s ICT readiness for business continuity (IRBC).

ISO/IEC 27031 aims to lessen the effects of business disruption.

ICT capable of responding to a threat to my information systems?" In the context of the business continuity management (BCM) process, IRBC refers to a system which complements and supports an organization’s BCM and information security management systems (ISMS) programme. Improved readiness enables an organization to:

- Respond to the constantly changing risk environment
- Ensure continuation of critical business functions
- Get ready to act and respond before an ICT service disruption occurs

ISO/IEC 27031 enables any organization to face threats head-on.

Figure 1 shows the general situation when an incident occurs and normal activity falls below the minimum level needed for normal operations. This illustrates the situation in which no BCM or IRBC system is in place. The organization can reduce business disruption and recovery times by implementing early warning, detection and prediction processes. This ensures that when an incident does occur, there is a gradual rather than a sudden and drastic drop in operations.

**Facing threats head-on**

Figure 2 shows how implementing BCM and IRBC systems can reduce disruption. By using ISO/IEC 27031, the organization can ensure that its ICT infrastructure, systems and services are resilient and robust enough to support business continuity. This involves the organization implementing a system to prevent, predict and manage ICT incidents and deal with any resulting disruptions in an effective and timely way. Getting ICT functioning as soon as possible can therefore contribute towards restoring normal business operations.

Figure 3 shows how IRBC elements help to reduce overall response and recovery time. The diagram highlights several points.

**Implementation and prevention**

ICT infrastructure and services need to be protected to prevent compromise from threats, such as environmental and hardware failures, operational errors, malicious attack and natural disasters. This is critical to maintaining the organization’s desired systems availability.

**Detection**

Detecting incidents early will minimize the impact to services, reduce the recovery effort and preserve service quality.

**Response**

An incident response should be carried out to: ensure efficient, effective recovery and restoration; minimize disruption and downtime; and reduce the risk of escalation into an emergency or crisis.

**Recovery and restoration**

Identifying and implementing the proper recovery strategy will ensure the timely restoration of ICT infrastructure and services and maintain data integrity and availability. It is important to understand and set the suitable recovery priorities to reestablish the most critical services first, and others later. ICT recovery can then support the resumption of normal business operations.

**Prevention and improvement**

Since it is vital to learn from experience, incidents should be documented, analyzed and reviewed. Lessons learnt will help the organization to be better prepared, fully in control and avoid repetitions. Whatever the incident, be it a cyber attack, a physical or environmental disaster or an internal employee problem, it is better to be ready. Fortunately, ISO/IEC 27031 enables any organization to face threats head-on.

**About the author**

Prof. Edward Humphreys

is Chair of the working group responsible for the development and maintenance of the ISO/IEC 27000 family of standards.

Involved in information security for 37 years, he has many achievements and awards to his name.
The “international” language

How safety signs and graphical symbols help reduce risks to people

by Barry Gray

Crossing language and cultural barriers, internationally understood safety signs and graphical symbols can mitigate risks and avoid potentially dangerous situations.

ISO technical committee ISO/TC 145, Graphical symbols, in particular subcommittee 2, works hard in this area, ensuring these signs and symbols contribute to increased safety in the workplace, home, car and elsewhere.

Used locally, understood globally

Why is a sign’s graphical symbol so important?

Firstly, graphical symbols are international as they do not rely on language.

In our globalized world, internationally standardized graphical symbols enable everyone to recognize and react rapidly to hazardous situations.

Secondly, graphical symbols can be easier to display and be more obvious and visible than a written message. A simple text-free message can be more obvious and visible. The symbol can also be larger than a sign with words.

Thirdly, people who find it difficult to read words or letters often find symbols easier to understand. Similarly, well-designed graphical symbols can assist those with vision problems.

The registered safety signs in ISO 7010:2011, Graphical symbols – Safety signs and symbols – Registered safety signs, include the warning sign for electricity, seen in workplaces and in public areas, and the radioactive material sign. The water-safety signage standard ISO 20712-1:2008, Water safety signs and beach safety flags – Part 1: Specifications for water safety signs used in workplaces and public areas, indicates potential hazards such as underwater obstructions.

Warning signs highlight potential hazards and enable people to take appropriate action. The registered safety signs in ISO 7010:2011, Graphical symbols – Safety colours and safety signs – Registered safety signs, include the warning sign for electricity, seen in workplaces and in public areas, and the radioactive material sign. The water-safety signage standard ISO 20712-1:2008, Water safety signs and beach safety flags – Part 1: Specifications for water safety signs used in workplaces and public areas, indicates potential hazards such as underwater obstructions.

Types of safety signs

Safety signs are a combination of colour, shape and graphical symbol. The colour and shape help users to recognize the type of sign.

Graphical symbols contribute to the well-being of people worldwide.

Emergency evacuation

Perhaps some of the most important examples of safety signs are those used for emergency evacuation. When a fire breaks out or a tsunami occurs, it is essential that people can find their way to a place of safety via a safe, clearly signed route. Well positioned, standardized signing is vital to ensure that those at risk evacuate in an orderly, calm and safe manner, even in an unfamiliar country where the language is not understood and panic is possible.

Graphical symbols enable everyone to recognize and react rapidly to hazardous situations.


Other ways symbols are used

Other types of graphical symbol also help to increase understanding and reduce risk. Covered by ISO 7000, graphical symbols for use on equipment can have the same virtues of recognizability. For example, symbols in our cars enable us to quickly understand controls such as windscreen wipers and horn, increasing road safety. In the workplace and at home, we benefit from the globally recognizable symbols on equipment.

For the benefit of all

Together with its subcommittees, ISO/TC 145 takes its role seriously to make sure graphical symbols contribute to the well-being of people worldwide. ISO/TC 145 has also developed standards for design principles to ensure the best possible results.

All safety signs and symbols are available via the ISO Online Browsing Platform.

About the author

Barry Gray is Chair of ISO/TC 145, Graphical symbols, having previously been Chair of ISO/TC 145/SC 1, Public information symbols. He is Convenor of two working groups in ISO/TC 145 and contributes to the work of other technical committees in ISO and the European Committee for Standardization (CEN). In addition, he carries out similar roles for The British Standards Institution. He has chaired the Sign Design Society and was formerly Signing and Design Manager for Network Rail.

ISO Focus May 2012
Be prepared!

Earthquakes, tsunamis, tornadoes, floods, fires, terrorist attacks, accidents or IT hacking attacks can happen at any time – with catastrophic consequences. Although it is nearly impossible to predict when the next disaster will strike, being prepared can significantly limit the damage and speed up recovery.

ISO standards help manage crises by offering global best practice and knowledge in all situations, from keeping the water supply clean to the safety of nuclear reactors.

And the winner is...

Anna Pfenniger

As a medical doctor and research scientist, Anna has developed an acute sense of observation. When outside the hospital, she enjoys finding beauty and humor in the most unexpected places – be it an urban jungle, a vegetable or an uncommon face. Through photography, she attempts to capture and share these often overlooked gems, hoping to transmit the sense of awe that she felt.

To build awareness of the importance of being ready for any incident, ISO organized a photo competition through Facebook (www.facebook.com/isostandards) and Twitter (www.twitter.com/isostandards).

Participants were invited to send images showing emergency readiness, a disaster or its aftermath. We received creative submissions from around the world. But the winner comes from Switzerland! Anna Pfenniger took this captivating photo showing emergency preparedness in action. Congratulations Anna!

Life jackets on Staten Island Ferry, New York City.
The Great East Japan Earthquake

At 14:46 on 11 March 2011, the Great East Japan Earthquake hit the largest city in the Tohoku Region of Japan’s east coast. About one hour later, many houses, factories and rice paddies in the coastal area were swept away by the destructive tsunami, triggered by the offshore earthquake; 704 people were killed in Sendai City alone, and 26 are still missing. The damage to Sendai City has been estimated at over USD 16 billion (JPY 1.3 trillion).

Minamigamo, the largest wastewater treatment plant in the city, located just 300 m from the sea, was also devastated by the tsunami. Waves over 10.4 metres above normal sea level hit the pumping facility closest to the shore. All cars and ground equipment were washed away and the entire treatment plant was inundated. Fortunately, all plant employees escaped to the earthquake-proof administrative building – the only happy outcome of the disaster. The Minamigamo plant, which had been treating 300 000 m³ of wastewater per day, came to a standstill. Rebuilding of the plant and full restoration of services is expected to take five years, at a cost of some USD 0.86 billion (JPY 70 billion).

As a result of our emergency work, there were not any major wastewater overflows in our city. We finished the survey of our 4500 km pipe thanks to help from other major cities of Japan. Our restoration has advanced steadily and we are ready to share the lessons of our experience with others.

Lessons learned

The disaster has highlighted the need for better risk, asset and crisis management in the future. It was evident that many water utilities in Japan had not implemented a risk management system, and that the concept of risk management was not fully understood.

Lessons learned from the recent Minamigamo experience must now be reflected in the water utility’s management system. Standardization is one of the most powerful tools to use in applying such lessons to an organization’s management system. In the case of the Minamigamo wastewater treatment plant, or indeed any water utility, the most urgent and appropriate standard is ISO 24511:2007, Activities relating to drinking water and wastewater services - Guidelines for the management of wastewater utilities and for the assessment of wastewater services.

ISO 24511 was developed by ISO/TC 224, Service activities relating to drinking water supply systems and wastewater systems – Quality criteria of the service and performance indicators. The International Standard provides guidelines for publicly and privately owned and operated wastewater facilities. It addresses wastewater systems in their entirety, and is applicable to systems at any level of development – e.g., pit latrines, on-site systems, networks and treatment facilities.

New crisis management system standard

The necessity of asset and risk management in the event of natural disasters is explicitly stated in the standard as one of the components of managing a wastewater utility. ISO/TC 224 continues to take a close interest in the asset and crisis management of water utilities, and is involved in new projects related to drinking water supply and wastewater systems.

In particular, the technical committee encourages broad implementation of management systems that enable water utilities to deal with disasters through standardization. For example, ISO/TC 224/WG 7, Crisis management of water utilities, is currently drafting a crisis management system standard that is expected to provide valuable guidance in the event of a disaster.

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Water authorities in Japan are contributing to the development of the new standard and to the effectiveness of a crisis management system for water utilities by drawing on the experience of the recent disaster. The aim is to improve the capability of the water industry to apply countermeasures against disasters through ISO and relevant standards.

About the author

Tetsuya Mizutani is Manager of the Asset Management Strategy Office in the Business Planning Section of the Sewerage Management Department of Sendai City, Japan. He heads a project to apply an asset management system to the city’s sewage works, and is a member of the national committee for ISO/TC 224, Service activities relating to drinking water supply systems and wastewater systems – Quality criteria of the service and performance indicators, WG 6, Asset management, and to ISO/PC 251, Asset management, WG 2, Requirements and applications guidelines.
Attention water utilities!

Future ISO guidelines for crisis management

by Bruno Tisserand, Jacobo Sack, Thomas Zenz and Yaron Ben-Ari

While water is vital for life, in many countries there remains a lack of knowledge about the crisis management of drinking water and wastewater services. To address this issue, ISO is preparing globally applicable guidelines to ensure water utilities respond successfully to any crisis situation – the future ISO 11830 on the crisis management of water utilities.

In the short term, impairment of drinking water services can seriously compromise the quality of life for many people; and in the medium term, it can threaten their ability to survive. The continuous and orderly supply of clean and potable water is of paramount importance. Also important is the removal and safe disposal of sanitary wastewater and drainage storm-water. This prevents epidemics and poisoning of the public by contamination and urban inundation. It also protects the environment.

Crisis management

Crisis management starts before the onset of a crisis and requires comprehensive preparation during routine operations. Figure 1 shows the different phases of a crisis management process. The future ISO 11830 standard on crisis management will describe the fundamentals of a crisis management system. It will include recommendations for water utilities and examples of relevant national authorities’ experience in crisis management. ISO 11830 will be the first of its kind: documents have been published on water safety before, but none deals with crisis management in water utilities. It will deal with situations in which the normal supply of potable water, or the removal and treatment of wastewater, are interrupted. It will also enumerate steps that should be taken in preparing the water utility for a crisis situation (pre-crisis phase).

ISO 11830 will provide a general guide on how a crisis should be dealt with (the crisis phase), on how to re-establish services (post-crisis phase) and on the best way to draw conclusions and revise procedures for future events. Figure 2 (page 31) illustrates how recovery activities can commence during the crisis phase to begin restoring service to parts of the system.

ISO 11830 will use the Plan-Do-Check-Act approach and will consider the following in its process:

- Ensure water supply and the removal and treatment of wastewater
- Cooperate with all the other authorities concerned
- Consider the natural environment as well as the impact on the health and well-being of the population
- Effectively communicate with the public to mitigate or prevent panic.

Attention water utilities

The future ISO 11830 will aim to meet water utilities’ needs for guidance on preparing and coping with possible crises. It will make it easier for national regulators to adopt a national policy for reducing risk and increasing resilience in the water industry, and prioritizing these in policy implementation. ISO 11830 will therefore contribute to the effective implementation of emergency management tools.

ISO standards are intended to be used in any water utility around the world.

Water utilities management will be in charge of implementing the future ISO 11830 standard. Regulators, local authorities or water utilities directorates will be responsible for follow-up.
The necessary investments and resources for the implementation of the guidelines depend on:

• The level of utilities development
• The likelihood of a large-scale crisis scenario being considered.

Well-developed utilities usually have most of the equipment and facilities needed, and have established emergency processes for crisis situations in their daily operations (such as repairs to broken pipes). If this is the case, it is worthwhile to concentrate on organizational issues by establishing a crisis management team. Poorly equipped utilities will need to do much more though, and might need to invest 10% or 20% of their total budget.

The continuous and orderly supply of clean and potable water is therefore of paramount importance.

Progress in implementation will be measured by the number of countries adopting the guidelines as mandatory or promoting the application as voluntary, and by the number of water utilities starting to implement the guideline recommendations in their management systems.

More than 35 countries are participants in working group WG 7, Crisis management of water utilities, and many others registered as observers. Formal publication as ISO guidelines is expected by the end of 2013.

About the authors

Bruno Tisserand is Chair of ISO/TC 224, Service activities relating to drinking water supply systems and wastewater sewerage systems – Quality criteria of the service and performance indicators.

Jacobo Sack is Co-convenor of ISO/TC 224, working group WG 7, Crisis management of water utilities.

Thomas Zenz is Co-convenor of ISO/TC 224, working group WG 7, Crisis management of water utilities.

Yaron Ben-Ari is Secretary of ISO/TC 224, working group WG 7, Crisis management of water utilities.
Anders Thor passes away
Anders J Thor, a long-standing contributor to technical committee ISO/TC 12, Quantities and units, passed away on 7 April 2012. A staunch and passionate supporter of standardization, Mr. Thor was Secretary of ISO/TC 12 from 1982 until 2009, when he was appointed Chair of the committee – a position he held until his passing. Mr. Thor had also been Secretary of ISO/TC 203, Technical energy systems, since 1991. He held many other leadership and expert positions in standardization, including convenor-ships in a number of ISO working groups, among others.

Mr. Thor believed in the importance of finding common ground in quantities and units. He transmitted this passion through his work, several articles that he authored for ISO Focus, as well as scientific publications and other texts. He was also appreciated by the thousands of students he taught at the KTH, Royal Institute of Technology, on the basics of mechanics.

Per Forsgren, Group manager at the Swedish Standards Institute (SIS) where Mr. Thor worked said, “Our thoughts go primarily to Anders’ family and relatives, who very suddenly lost a loved one and a friend. At SIS, many of us will remember his tireless, non-negotiable, hard work and commitment to have SIS project management use standardized and established quantities and units in standardization work.”

In addition to standards, Mr. Thor had other passions. He was a two-time Swedish basketball champion in the 1950s and played basketball in a number of ISO working groups, among others.

African CEOs in standards safari
CEOs of various African national standards bodies (NSBs) came together at a forum organized by ISO and the South African Bureau of Standards (SABS) in Pilanesberg Game Reserve, North West Province of South Africa in February 2012. The event was an opportunity to discuss CEO responsibilities as leaders of national standards bodies and ISO members, and to review ISO’s intellectual property rights (IPR) policies. ISO Secretary-General, Rob Steele, and ISO Director Marketing, Communication & Information, Nicolas Fleury, facilitated the meeting.

SABS IPR Specialist Samanthta Harding highlighted the challenges faced by SABS when protecting ISO intellectual property, name, logo, etc. Mr. Steele said that work is under way to align the different policies and procedures, including dealing with national adoptions of ISO Standards.

Ian Thomas, a motivational speaker, captivated the audience with a presentation on “Power of the pride”, where he illustrated how lions worked together to achieve a goal. He made the analogy to teamwork.

Participants also discussed learning and development as well as the way forward. Emphasis was put on the sustainability of NSBs.

To overcome these barriers, leaders must talk the language of government, and understand what the customer wants, said Mr. Steele, drawing attention to case studies in Canada, France and Germany that demonstrated a direct link between the economic impact of standards and the growth of GDP.

Customer focus, governance, training and retention of staff, as well as skills transfer and staff motivation, were identified as leadership goals. Some CEOs were concerned that standards are perceived as a “maining ground” for the public sector with staff head-hunted after a year or two. SABS Human Capital Executive, Mercy Mathibe, demonstrated how the balanced scorecard could support learning and development in organizations.

CEOs discussed the role of the different sub-groups in the African region and how these could be reinforced to strengthen relationships, exchange ideas, and discuss challenges and concerns. For example, ISO and Southern African Development Community Cooperation in Standardization have signed an agreement to enhance collaboration, especially in training.

Africa South full throttle
While in South Africa, ISO Secretary-General Rob Steele actively participated in a number of initiatives organized by the South African Bureau of Standards (SABS), ISO member body for the country.

Mr. Steele delivered the keynote address at SABS’ first Academic Open Day in March 2012, highlighting the role that standards play in innovation, and dispelling the notion held by many that the two worlds do not belong together. He did this through several examples of standards that had an important role in supporting innovation and even created further opportunities for innovation.

Mr. Steele stressed three important areas where academics should get involved with standards.

Firstly, by getting standards into curricula so that students entering the workplace are aware of standards, their importance, how they are developed, and why they should get involved in standardization.

Secondly, implementing standards can help training institutions to gain advantage from the body of knowledge and best practice guidelines to better manage their business (e.g., ISO 9001 on quality, ISO 14001 on environment, and ISO/IEC 17025 on requirements for testing laboratories).

Finally, by participating in standards development through national and international committees as a way of applying academic research.

The ISO Secretary-General concluded by noting the ongoing research to measure the economic benefits of standards which, he noted, is critically important for standards developers to get companies to not only use, but really commit to standardization.

During his visit, Mr. Steele attended the signing ceremony of a Memorandum of Understanding between SABS and the Technology Innovation Agency (TIA). Under this agreement, the SABS standards and conformity assessment services will be made available to young entrepreneurs and school graduates who have pre-qualified for TIA funding under the Youth Technology Innovation Fund. It applies to a variety of sectors including chemicals, electro-technical, food and health, biotech, mechanical and materials, mining and minerals, services and transportation.

Finally, the ISO Secretary-General visited Megawatt Park, ESKOM’s headquarters (an energy giant). Addressing the ESKOM Sustainability Committee, Mr. Steele emphasized the benefits of standardization for promoting sustainability. He drew attention to some new areas of development such as coal-bed methane, biogas, etc. ESKOM gave an overview of their implementation of ISO 9001, ISO 14001 and ISO 50001 (energy management).

The ISO Secretary-General concluded his visit to SABS with a presentation at a workshop for small, medium and micro enterprises (SMMEs), where he stressed the importance of standards for enhancing business.

Tyres on a roll
Experts from around the world came together in Kyoto, Japan for the plenary meeting of ISO technical committee ISO/TC 31, Tyres, rims and valves, in March 2012.

Progress was made on run-flat tyre standards, snow grip performance on trucks and buses and noise reduction among other topics.

The meeting was also an opportunity to highlight and reinforce close coordination with key stakeholders such as the UN Economic Commission for Europe (UNECE) World Forum for Harmonization of Vehicle Regulations (WP.29) GRFR (working party on brakes and running gear) and GR13 (working party on noise).

Participants came from Canada, France, Germany, India, Italy, Japan, Thailand, the United Kingdom, and the USA.

Food safety looks ahead
In 2010, food safety management standard ISO 22000-2005 saw an increase of 34% in certifications, the highest of all ISO management standards according to the ISO survey of certifications.

As the use of the ISO 22000 family of standards continues to grow, the ISO subcommittee responsible – SC 17, Management systems for food safety, within ISO/TC 34, Food products – is ensuring success by planning its strategy for the next five years.

The subcommittee would like to increase knowledge and use of the ISO 22000 family of standards. Following a survey conducted amongst food industry experts and other stakeholders, SC 17 developed the 2011-2015 Strategic Plan to ensure that work progresses in a structured manner and meets user needs.

The main objectives of the 2011-2015 strategy are:

• ISO 22000 should be the leading standard for food safety worldwide for organizations of all types and sizes
• Cooperation with the Codex Alimentarius Commission will be strengthened
• Tools facilitating use of the standards should be easily accessible to users

Overall, the key objectives can be summarized as: accessibility, applicability, involvement, transparency and dynamic response to market needs.

For more information about ISO 22000 see: www.myiso22000.com
Cloud computing – the delivery of computation, software applications, data access, management and storage resources “from the cloud”, Le from infrastructure at a remote location, has grown into a multi-billion euro market since its birth in 2007. Finding a global information and communications technology (ICT) provider certified to ISO/IEC 20000-1:2011, Information technology – Service management – Part 1: Service management system requirements, is one way to mitigate the doubts and fears of organizations evaluating their entree into the world of cloud computing.

By 2014, sales of cloud computing products and services are expected to generate nearly EUR 43 billion in annual revenue, and the cloud computing model will propel IT growth and expansion for the next 20 years, according to market intelligence provided by the International Data Corporation (IDC). Today, the model promises enterprises great benefits in terms of IT agility, flexibility, scalability and cost reductions.

Some hesitation

Thanks to cloud computing, organizations can have access to powerful and flexible computing capabilities – and with more flexibility than ever, they can externalize all or part of their information systems, workspaces, servers, applications and storage. This allows organizations to personalize computing infrastructures to their needs and to the specific requirements of their industry. However, some hesitate when considering the promise of cloud computing. Trust and cloud computing adoption go hand-in-hand. Migrating to the cloud raises questions and concerns for enterprise customers, particularly related to their secure, business-critical applications. Finding an ISO/IEC 20000-certified ICT provider is one way to ease those doubts of those companies considering the transition.

ISO/IEC 20000 key to customer trust

ISO/IEC 20000 implementation and certification is the logical objective of a global ICT provider like Orange Business Services. The release of the latest 2011 version of the International Standard completes our alignment with ITIL V3 (2011) IT qualifications, and enables us to validate our alignment with the widely adopted ISO/IEC 27001 information security management baseline.

Orange Business Services is a global organization delivering services in more than 220 countries and territories with a presence in 166. To deliver services on such a global scale, we operate seamless global processes managed under a corporate governance model that applies worldwide.
management solutions

security management system certifications and the common governance requirements and continuous improvement loops inherent in all three standards.

A decision was made from the beginning to introduce these standards progressively and in an integrated manner, based on the Orange Business Services governance model, and built on our initial corporate ISO 9001 certification. This gives Orange a regularly audited and certified quality management system based on best practice ICT service management processes, underpinned by a standard set of security controls.

Orange Business Services delivers services in more than 220 countries and territories.

We have even gone a step further than the ISO management system standards, by integrating ISAE 3402, the new international standard for service organization assurance engagements, into our governance model.

To be clear, these standards are integrated at the process and operational level, given that the underlying audit system is not harmonized across ISO and ISAE. Furthermore, from 2013 we plan to integrate our ISO 14001 environmental management system as well.

Standards support cloud objectives

Orange Business Services is successfully delivering on its promise and creating notable momentum in the cloud computing market. The company has confirmed its cloud computing ambition and strategy as part of its “Conquests 2015” programme. Cloud computing is one of the key growth drivers defined by Orange in its five-year plan, and we aim to generate EUR 500 million via the cloud model in 2015. It is also part of our own service transformation programme.

Launching these sophisticated services would be very difficult without the springboard provided by our integrated management system and governance model. Our ITIL V3 aligned processes for IT delivery have been improved over a number of years through our programme of ISO management system standards (MSS).

For example, we have developed and optimized the operation of our change advisory board and our problem management process to take advantage of these management system certifications. The improved productivity and customer satisfaction that results go hand-in-hand with the targeted growth we are seeking.

Standards underpin global market strategy

Not surprisingly, our global customer base expects Orange Business Services to achieve certifications on an international level. Today more than ever, our customers and markets are seeking additional assurance that their service providers are audited regularly to ensure expected service levels wherever they are providing services. ITIL processes, ISO MSS, and ISAE assurance reports help us to convince our customers that Orange is more than capable of delivering to their expectations.

Cloud computing creates numerous market opportunities for organizations, and helps address many of their IT challenges. By optimizing IT infrastructures and enhancing productivity, cloud computing can enable companies to do more with their IT budgets. However, choosing the right cloud computing service provider is critical.

Orange Business Services encourages enterprise customers to assess providers by looking at the certifications they hold that address the challenges of cloud computing. By choosing an ISO/IEC 20000-certified provider, enterprises can have the assurance they need to take the first step in the cloud computing journey. As a result, they will achieve clear business benefits backed by essential global quality, services and security management standards.

We participate with the Distributed Management Task Force (DMTF) in its Cloud Management Work Group to advance international cloud computing and virtualization management standards that will allow more choice for IT customers via interoperability and portability between cloud environments. In addition, Orange has joined the Cloud Security Alliance as a corporate member to lend its global expertise to promoting best practices for security within cloud computing.

The objective of Orange Business Services it to make it easy for enterprises to access the IT resources they need by providing a one-stop-shop for a range of cloud computing services. By taking an integrated approach, Orange can deliver network and IT “as-a-service” with end-to-end service level commitments wherever our customers do business.

ISO 14067 to enable worldwide comparability of carbon footprint data

In 2010, over 30 billion tonnes of carbon dioxide were released into the atmosphere globally – that is an enormous amount of the greenhouse gas emissions that cause global warming. The upcoming International Standard ISO 14067, Carbon footprint of products – Requirements and guidelines for quantification and communication, is being developed to increase transparency in quantifying and reporting CO₂ emissions over the entire lifecycle of products and services – from production to recycling or waste disposal. The document is currently at the stage of Draft International Standard (DIS) and expected to be finalized for publication in March 2014.

In addition to lifecycle analysis, the new standard will focus on greenhouse gases, globally the most important environmental factor, and ensure that carbon footprint data will become comparable worldwide for the first time. ISO 14067 will also be consistent with other standards such as ISO 14025 (environmental labels and declarations), ISO 14044 (lifecycle assessment) and BSI PAS 2050 (specification for the assessment of the lifecycle greenhouse gas emissions of goods and services).

Significant anthropogenic influences

In its synthesis report on climate change published in 2007, the Intergovernmental Panel on Climate Change (IPCC) stated that the climate system is unequivocally warming. This is evidenced by observations of an increase in globally averaged air and sea temperatures, extensive melting of snow and ice as well as a rise in the mean global sea level. As a result, millions of people are threatened with losing their homes and livelihoods because of anthropogenic CO₂ emissions.

In 1972 – already 40 years ago – the Club of Rome alarmed the public with its forecasts on “The Limits to Growth”. By 2005, it had become evident that humans have a significant impact on climate change through greenhouse gas emissions – a fact recognized by the eight leading industrialized nations (G8) at their summit in Gleneagles, Scotland, that year. The G8 summit was also attended by representatives from developing and newly industrialized countries, such as China, India, Brazil and Mexico, and from numerous international organizations.

Consumers will have all the information for assessing a product.

In addition, the G8 leaders agreed on an action plan for climate protection measures, and recognized the Kyoto Protocol as a potential regulating mechanism for market-based incentive systems.

ISO Focus – May 2012

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is a freelance Austrian journalist and regular contributor to CONNEX Journal published by Austrian Standards. This is an edited version of an article first published in the January/February 2012 edition.

Herbert Hirner is a freelance Austrian journalist and regular contributor to CONNEX Journal published by Austrian Standards. This is an edited version of an article first published in the January/February 2012 edition.

Standards New Zealand is working to ensure standards reflect lessons learned.

Although the September 2010 earthquake was of greater magnitude, it was the magnitude 6.2 earthquake of 22 February 2011 that led to the most deaths and damage to buildings. Tragically, a total of 185 people died, and many others suffered serious injuries.

These events led New Zealand’s government to form the Royal Commission of Inquiry into Building Failure Caused by the Canterbury Earthquakes. In October 2011, this commission released an interim report to “inform early decision making on rebuilding and repair work that form part of the recovery from the Canterbury earthquakes.”

These recommendations include the review of several New Zealand building standards to support the Canterbury rebuild. A final report is expected to be delivered to New Zealand’s Governor-General in November 2012.

Thus, numerous assessment models have been developed in recent years. However, there were no suitable tools for comparing these classifications, no agreement on a common terminology, nor were the assessments generated sufficiently documented to allow for objective analyses.

Comparing data, communicating quickly

Now, for the first time, ISO 14067 will enable the quantification of CO₂ emissions over the entire lifecycle of products and services, and ensure that the relevant values become comparable worldwide.

The standard also covers communication of carbon footprint data to consumers. Communication tools of claim, label and declaration used by ISO to date are complemented by an external communication report (ECR) and a carbon footprint performance report (CFPR).

While the existing tools require time-consuming studies or programmes, the ECR and CFPR serve to provide consumers with rapid, traceable and, hence, reliable information that depends less on quantification.

The next goal would be a “personal carbon footprint.” Just imagine the dynamism that can be created if companies pursue the objective of manufacturing the product with the smallest carbon footprint,” says Dr. Radunsky.

Benefits of ISO 14067

How can manufacturers and service providers benefit from ISO 14067? Put simply, they can identify the lifecycle processes that significantly contribute to the carbon footprint of a product or service in an initial screening. Then, they can take targeted measures to reduce emissions and raise the efficiency of the value creation chain.

Thanks to the new standard, this optimized carbon footprint can be communicated to consumers through traceable information. As a result, consumers will have all the quality information required for assessing a product.

ISO 14067, developed by 107 experts from more than 30 countries, makes reliable and comparable parameters available to enterprises and consumers. This is a significant preparatory step towards the reduction of CO₂ emissions worldwide. ISO experts, however, are already considering further actions.

“The next goal would be a ‘personal carbon footprint’. Just imagine the dynamism that can be created if companies pursue the objective of manufacturing the product with the smallest carbon footprint,” says Dr. Radunsky.

To effectively reduce greenhouse gas emissions, one must first identify their sources. The carbon footprint concept highlights the contribution of individual products to the greenhouse effect. Attempts were made to draw up a kind of balance sheet by adding up all the carbon dioxide emissions caused by a product throughout its lifecycle.

Carbon footprint reveals polluters

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Nobel Peace Prize laureate Dr. Klaus Radunsky, department head at Umweltbundesamt, explains: “This new standard is certainly a milestone. ISO 14067 is a very important tool for obtaining a good indication of areas in which greenhouse gases can be reduced. On the other hand, the standard can help raise awareness of this issue. After all, the decarbonization of our economy eventually depends very strongly on individual consumption decisions.”

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Between September 2010 and December 2011, a series of powerful earthquakes wreaked devastation in New Zealand’s Canterbury region, particularly in Christchurch. What has been the country’s response and what role can standards play in the face of natural disasters?

On 4 September 2010, a magnitude 7.1 earthquake struck the city of Christchurch and the surrounding region of Canterbury. This earthquake triggered a rippling effect throughout the region, with major earthquakes occurring on 26 December 2010, 22 February 2011, 13 June 2011, and 23 December 2011. GNS Science, New Zealand’s leading seismic hazards research organization, says the ground accelerations in Christchurch on 22 February 2011 were the largest ever recorded for a New Zealand earthquake.

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Seismicity – developing a model

GNS Science has built a national seismic hazard model (NSHM) to predict the likely magnitude and frequency of major earthquakes. Developed for use in engineering design, NSHM was updated in 2010, before the September 2010 earthquake.

As well as modelling earthquakes on known faults, the updated model now allows for earthquakes on hidden faults up to a region-dependent maximum magnitude. For Canterbury, the new seismic model raised this magnitude from 7.0 to 7.2, just encompassing the magnitude 7.1 of the September 2010 earthquake.

This type of information is now being fed into standards development and review processes. In building, fire protection, infrastructure, and risk management, Standards New Zealand is working with government, communities, and industry to ensure our standards reflect lessons learned from recent events. An important aspect of this work is also to identify what standards are working well.

Standards as building blocks

In New Zealand, many building standards are codified in the country’s building legislation and building code. For example, NZS 3604:2011, Timber-framed buildings, is a core resource for demonstrating compliance with the New Zealand Building Code.

Roger Shelton, Senior Structural Engineer, Building Research Association of New Zealand, and a member of several national and international standards committees including the one responsible for NZS 3604, says that codifying building standards in New Zealand legislation helps to ensure best practice. He says: “After the September 2010 and February 2011 earthquakes in Canterbury, early findings suggest most buildings that met current standards fared well.”

He cautions, however, that standards development is an iterative process: “Buildings that failed through the Canterbury earthquakes may have been built to standard at the time, but our knowledge continues to grow and, based on that knowledge, standards continue to evolve.

“And while standards development is important, it’s equally crucial that we ensure building professionals and consumers are well informed, and compliance with appropriate standards is achieved.

“One of New Zealand’s advantages is that we are a relatively small country where government, industry, and consumer representatives come together to solve issues. That allows a nimbleness and responsiveness to issues that might be harder to achieve in other parts of the world.”

The standards difference

Since the September 2010 earthquake, engineers and building experts have worked closely with government officials and Canterbury communities to identify issues that need to be addressed as Cantabrians begin to rebuild.

One expert is Chris Mak, who has over 25 years’ experience in fire protection, and currently manages the technical services business unit of insurance broker and risk management provider, AON New Zealand.

Chris Mak says that, overall, fire protection devices (such as sprinklers) that meet applicable standards performed well in the Canterbury earthquakes: “What we found after the September 2010 and February 2011 earthquakes is that most sprinkler system damages were attributed to building collapse, or mechanical damage by building element failures.

“Still, there have been several lessons learned for future fire protection standards development, including the collapse of about a dozen constructed water tanks and the potential need for some classes of buildings to have dedicated water supplies in case public water service is interrupted.”

In light of the earthquakes, the review committee of NZS 4541:2007, Automatic fire sprinkler systems, which Chris Mak chairs, is examining seismic provisions for water tanks and considering the inclusion of an appendix to the revised standard that introduces guidelines for steps to take following a natural disaster. The draft standard is expected to be released for public comment later in 2012, with publication of the final standard scheduled for March 2013.

Chris Mak says: “Another aspect of fire protection that needs further consideration is what happens if there is more than one disaster, for example if a major fire occurs after an earthquake. There is work to be done in assessing risk and analyzing costs and benefits to determine the level of fire protection that should be prescribed.”

The big picture

Beyond individual building issues, government officials and industry leaders are increasingly aware that resilience should be built into our overall systems to deal with extraordinary circumstances. In this context, resilience is defined as putting processes in place that help communities anticipate and, if necessary, respond and recover from disruptive challenges.

I see an important role for standards in addressing resilience both in New Zealand and internationally. Resilience standards could be developed in a similar way to how risk management standards, such as ISO 31000:2009, Risk management – Principles and guidelines, have evolved to offer organizations and communities a process-oriented approach to deal with complex and unexpected problems.

Standards New Zealand is currently considering resilience planning and many other areas of work.

The Canterbury rebuild is a huge challenge to New Zealand, and industry, government and local communities must continue to work together to ensure success. Extending beyond physically rebuilding Canterbury, this great effort has social, environmental, economic, and cultural dimensions, too.

About the author

Debbie Chin is Chief Executive of Standards New Zealand, a role she has held since 2007. Among her previous roles she has been Deputy Director, General Corporate and Information, Ministry of Health, and Advisor for the Department of Prime Minister and Cabinet. A Chartered Accountant, she is a graduate of Victoria University, Wellington.
Safety first

Global regulations protecting lives and property

by Len Swantek

There is much more to fire protection regulation than simply following the rules. Helping shape them is equally important. In this article, I will give a description of the regulatory process from product design to post production, and explain the role and importance of standards development in support of the global fire safety industry.

Getting the groundwork right

Regulation is a highly complex matter for manufacturers, code enforcement officials and property owners alike. With global emphasis on improving fire safety, today’s manufacturers are filing new product approval applications with the major certifying agencies at a rate not seen since the early 1990s. The output of this work yields a large amount of laboratory test data, that is invaluable to ISO technical committee ISO/TC 21, Equipment for fire protection and fire fighting, subcommittee SC 5, Fixed firefighting systems using water, in their efforts to develop the highest quality and most comprehensive fire safety product qualification standards possible.

Some producers have more than 100 different projects in the approval cycle at any given time, along with hundreds of follow-up examinations and annual production external audits each year.

Given the critical applications and the broad range of systems in which fire protection products are applied, it is not surprising that there should be so much scrutiny. However, it does require considerable management and coordination to meet both agency and customer requirements.

Before regulatory procedures even begin, a tremendous amount of time is invested in research and development. For example, ensuring proper water supply and distribution over a given commodity, material hazard or occupancy is at the forefront of the fire sprinkler designer’s agenda.

Product and technology designs and future concepts that are coming through manufacturers’ internal evaluation processes are judged against a wide range of both national and international performance standards. This validates their long-term durability, serviceability and established ratings if ever called upon in a real-life fire.

This is where our committee discussions on ISO/TC 21/SC 5 play a key role in identifying and comparing trends in the global fire safety market. During this process, we receive input from manufacturers, regulatory agencies, contractors, insurance industry and fire-code enforcement officials, and others. This input can be from direct committee attendees as well as from comments submitted during the balloting process from a wider range of principal and observer members.

A fire event in one part of the world is quickly communicated to a broad audience around the globe.

This process enables us to share experiences and cross-train our members with a broad range of knowledge in fire safety product testing and standards development.

Pre-testing to these stringent standards is a key function in determining critical attributes, as well as individual component durability that make up the overall performance ratings of the end device or complete system. This process would not be complete without replicating known field scenarios that could be encountered, applying process technology and even re-engineering products as necessary. At the subcommittee level, the combined contributions from a wide range of expertise generate valuable discussions and collaboration.

Although this can be difficult and time-consuming in the consensus building process, the end result is a well-balanced criterion for each particular area of product specialization in the standard (fire sprinklers, valve products and other related components).

Life-long assessment

Development of a new product is a lengthy process, often involving many months, and sometimes years. However, this is time well-spent and, while most people would often take this for granted in a sprinkler system installed in their workplace or home, there is no substitute for these labour-intensive and costly product qualifications in the event of an actual fire.

A single fire safety system component can be subjected to testing and/or technical evaluations by more than 35 different agencies worldwide. For time and cost considerations, some manufacturers use a tier-based approach to their third-party testing. For example, a manufacturer may select the most important product certifications required to capture its initial market objectives and a return on its product development investment.

These initial certifications and test data can often be used to achieve the next level of agency approvals in a particular region that also follows a similar fire code, or that recognizes and follows the performance standard used in the region where the initial agency qualification took place.

This is also an important feature of our global committee collaborations, in that some regions with less developed fire safety standards and infrastructure can benefit from other delegates having more experience in fire safety product testing and available data from their regional laboratory resources.

To facilitate actual performance testing, product samples, pipe of various specifications and other related equipment must be organized and shipped to applicable agency facilities globally. This is another
time-critical operation as any delays by a manufacturer could result in a lost position in the testing laboratory’s queue. At this stage, documentation must already be available in multiple languages for examiners to assemble equipment themselves based on an assumed level of skill equal to that of the end user. On average, the testing process takes six to nine months to complete. The approval authorities are also concerned with the manufacturing and assembly locations of specific finished parts or sub-assemblies. Those parts that are most critical to the overall performance of the finished assembly will have greater regulatory oversight. If the manufacturer produces in multiple locations worldwide, this can greatly increase costs as each location must be certified and audited regularly.

In the event of a non-conformance at this stage, a manufacturer risks losing valuable time to market and must re-submit for a re-evaluation, but only after design modifications have been finalized and documented. Upon successful completion of all testing to the applicable standards, the certifying authority will issue its final report with all relevant data, along with a formal certificate or other documents confirming compliance with the relevant standards.

Global stages and audit process

With more than 35 regional agencies throughout North America, Europe, the Middle East, Africa, India and Asia-Pacific – and each having individual jurisdictional authority over specific systems or applications – approvals for the complete global market can take up to a year or more to complete.

Independent of this process, the committee could receive comments, suggestions or questions raised by any of our global delegates related to existing standards or for future consideration as a revision or future standard. For the manufacturers, this can be particularly concerning, as any future change to the standard could affect the type and amount of certification testing required to qualify the end product. As such, manufacturers can only go to market when they have secured all applicable certifications and each product or package carries the appropriate agency markings. Once complete, only then can results be reviewed and data fed back to the research and development teams. All project correspondence is then archived and manufacturers move on to the audit management process, the final phase in the regulatory cycle.

Audit management starts when a product certification is officially released and only when the product is no longer produced. Through various surveillance procedures and factory production control audits, products are re-tested annually as a minimum requirement. Some regulatory authorities re-examine products quarterly and sometimes even weekly – to ensure high-quality performance to regional agency codes and standards, and to check that manufacturing processes remain unchanged.

Auditing is especially important since codes are constantly evolving to improve health and safety as a result of real-world factors. A clear understanding of the most up-to-date requirements is vital to the successful completion of the approval cycle and for maintaining the ongoing production reviews.

Ongoing safety watch

Manufacturers of fire safety products work with regulators, code officials and competing manufacturers to overcome problems encountered in the various industries and to better protect property and lives.

Changes to codes and standards are frequently driven by trends in construction techniques – some for instance are prompted by the push towards lighter weight and more recyclable materials. They are also driven increasingly by immediate events that, on the surface, may seem unlikely in certain areas or impossible to duplicate in other market segments.

Through instant global media and advanced web tools, a fire event in one part of the world is quickly communicated to a broad audience around the globe. The openness of today’s communications allows the codes and standards committees to quickly become aware of a potential need to enact new legislation, revise existing building and fire codes and create both short- and long-term solutions for installers, inspectors and building owners.

The scale of fire events and related circumstances are also often matched with the degree of urgency in making critical changes to the applicable codes and standards. For example, if a fire investigation reveals a product performance deficiency in one region, this information can be easily disseminated and brought to the committee for discussion and action as deemed appropriate.

SC 5 recently engaged in such discussions to help other delegates understand the specific circumstances that led to a regional product recall and revision of the related qualification standards. In fact, some of the most beneficial work to improve the effectiveness of fire safety standards and product testing is often the result of real-world events.

Duplicating these events and conducting product performance trials becomes the task of regulators and manufacturers. Testing a wide range of samples to new or proposed standards is serious work, making fire protection one of the most regulated industries in the world.

Agency testing is among the most exacting of all market segments. Although heavily influenced by the insurance industry, fire protection and fire safety are also among the most widely recognized areas of public concern globally, irrespective of cultural or demographic influence.

We can all learn from real-life situations and effect change where needed – whether this means collaborating in committees with manufacturers and regulatory bodies to create the most well-rounded and effective regulations, or joining with contractors and end-users to help solve real-world problems and build on shared learning to develop new products.

Working together is important, and we greatly appreciate the focus and individual efforts of all of our committee members. The safety of our communities is, after all, the number one consideration of everyone in this business.

About the author

Len Swantek is Director of Global Regulatory Compliance at Victaulic. He is also Chair of ISO/TC 21, Equipment for fire protection and firefighting, subcommittee SC 5, which oversees standards governing “fixed fire-fighting systems using water” within the scope of the ISO 6182 series.
The state-owned Assets Supervision
The Shenzhen and Shanghai stock
Jinan Sunny Sister Domestic Service
The State Grid Corporation has
SR has been written into China’s
COSCO Group has implemented
the absorption of western and international
responsibility as good business practice, and
With the growing momentum of social
and social activities for the public good.
ability in China centered mainly on charitable
on social responsibility
by Chen Wang
A new way of doing business
Less than two years after publication, ISO 26000:2010, Guidance
on social responsibility, has had a significant impact worldwide. In
China, while some of the standard’s principles were initially unfamil-
lar, it is being rapidly and broadly accepted.
Traditionally, the notion of social responsi-
bility as China centered mainly on charitable
and social activities for the public good. With the growing momentum of social
responsibility as good business practice, and
the absorption of western and international
ideas on the subject, this Chinese approach
has evolved. There is now a greater emphasis on: sustainable development; compromise
between stakeholders; mutual understanding;
balance; and the careful, multidimensional
consideration of economic, environmental,
and social responsibilities. This change in
thinking has enabled Chinese people to
assess themselves and their activities with
a new, longer-term perspective.
A solid start
The movement towards social responsibil-
ity (SR) in China is well underway. Since the
initial release of a responsibility report on
national enterprises in 2006, Chinese com-
panies have taken a particularly strong lead.
The Chinese edition of ISO 26000 was
published in November 2011. It was trans-
lated by the Standardization Administration
of the People’s Republic of China (SAC),
under the authorization of ISO, to help
drive the development of SR in the country.
In addition to the standard, the concept is
backed by a number of other recent initia-
tives including:
• SR has been written into China’s
  revised company law
• The state-owned Assets Supervision
  and Administration Commission has
  stated that national enterprises should
  implement SR
• The Shenzhen and Shanghai stock
  exchanges have released SR guidance
  for listed companies
• Some local governments have estab-
  lished SR programmes and guides
• The China Textile Industry Associa-
  tion, China Association of Industrial
  Enterprises, and other industrial organi-
  zations have released SR guides for
  their sectors.
Moreover, numerous organizations,
including social bodies, communities,
investors and research institutions, have
adopted and are implementing SR.
A large number of universities, research
institutions and other educational establish-
ments now feature courses on the subject.
SR is changing management practices in
China, the exact manner depending on the
structure, nature, approach and farsighted-
ness of the organization involved.
Some local governments and companies
have adopted SR development performance
as the assessment indicator, demonstrating
their drive and determination to build effec-
tive SR management systems.
Examples of other organizations embrac-
ing SR include:
• Jinan Sunny Sister Domestic Service
  Co., Ltd has released the first Chinese
  SR report on SR based on ISO 26000
• The State Grid Corporation has
  released the “Guide for implementa-
  tion of social responsibility” to
  enterprises in its own industry, and
  has implemented a pilot scheme for
  responsibility management
• COSCO Group has implemented
  indexing the management of sustain-
able development.
International approach
Over recent years, China has greatly
strengthened its SR-related international
involvement and links. In addition to adopt-
ing the concepts, principles, management
tools and assessment standards of SR, China
has welcomed independently authenticated
international institutions such as Global
Compact and Global Report Initiative.
In international forums on SR, Chinese
contributors have a significant presence
and continue to increase their participation.
Future growth
The growth of SR should improve organi-
zations’ decision making, risk assessment,
financial and non-financial success and
long-term sustainability.
It is also hoped that SR will be admitted
into the strategies for national governance,
and that the national government will
play a more active role in initiating and
supervising SR.
For companies, sustainable development
needs to be a core element of new, greener
development models.
If Chinese SR is to go on growing, we
need to see cooperation, flexibility and
steady determination across the country.
One day – perhaps soon – Chinese com-
panies will regularly appear as case studies
in international forums and the world’s
leading business schools.
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Adobe Extensible Metadata Platform (XMP)

Now an ISO standard

by Elizabeth Gasiorowski-Denis

Have you accessed or modified the data embedded in a file today? Even if you have not, there is a good chance you did recently. This is because the XMP (Extensible Metadata Platform) for tagging information electronically has become part of the digital document landscape of today and a new ISO standard will allow users to have a thorough understanding of the XMP data model.

ISO 16684-1:2012, Graphic technology – Extensible metadata platform (XMP) specification – Part 1: Data model, serialization and core properties, offers content creators an easy way to embed meaningful information about their projects. It is useful for anyone who wishes to use XMP metadata, including both developers and end-users of applications that handle metadata for resources of any kind.

Adobe’s Extensible Metadata Platform (XMP) is a labeling technology that allows users to embed data about a file, known as metadata, into the file itself. With XMP, desktop applications and back-end publishing systems gain a common method for capturing, sharing, and leveraging this valuable metadata – opening the door for more efficient job processing, workflow automation, and rights management, among other possibilities. This is where ISO 16684-1 comes in.

Adobe Systems Director of Engineering, Frank Biederich, commented: “I am excited to see ISO advance open and extensible metadata by releasing the first part of the Adobe XMP specification as an International Standard. Going forward, this allows industry experts to influence the direction of XMP and drive innovation leveraging an established metadata ecosystem.”

“With its continuous commitment to openness, Adobe will expand its engagement to other ISO groups in the future to help develop and standardize metadata workflows based on XMP.”

Metadata can greatly increase the utility of resources in collaborative production workflows. For example, an image file might contain metadata such as its working title, description, and intellectual property rights. Accessing the metadata makes it easier to perform tasks such as searching for images, locating image captions, or determining the copyright clearance to use an image.

The new standard, ISO 16684-1:2012 is based on the XMP specification part 1 version developed by Adobe Systems. Establishing this International Standard ensures the stability and longevity of its definitions and encourages broader integration and interoperability of XMP with existing standards.

Mr. Biederich further noted: “Effective metadata management has become increasingly important with the explosion of digital data. The Adobe Extensible Metadata Platform (XMP) offers a powerful metadata infrastructure to the industry and is a widely adopted technology, specifically in the area of image and document management.

“The XMP platform not only helps operating system vendors and software companies to seamlessly exchange media related information, it also has been adopted by camera manufacturers applying metadata to content early in the creation process. ISO 16684-1:2012 supplies two essential components of XMP metadata: data model and serialization. In addition, this part defines a collection of core properties, which are XMP metadata items that can be applied across a broad range of file formats and domains of usage. Future parts will address formal validation of XMP and XML syntax for describing XMP UI elements. In addition, ISO 16684-1:2012 will serve as the foundation for domain specific ISO activities, for example, ISO/TC 42, Photography, working group WG 18, Electronic still picture imaging, or ISO/TC 171, Document management applications, SC 2, Application issues, WG 5, PDF/A.

ISO 16684-1:2012 was prepared by Adobe and was adopted by ISO/TC 130, Graphic technology, under a fast-track procedure. It is available from ISO national member institutes. It may also be obtained directly from the ISO Central Secretariat (www.iso.org) through the ISO Store or by contacting the Marketing, Communication & Information department (sales@iso.org).

Elizabeth Gasiorowski-Denis is Editor in Chief, ISO Focus+.

Far from being a barrier to innovation, International Standards can be an important driver. According to the World Bank, one of the most important economic benefits of standards is that they increase productive and innovative efficiency. But that’s not all. Standards are the building blocks that influence technological advances and determine innovation performance. In particular, they influence the innovation process by setting the direction for future technological developments. And they can be a catalyst for innovative thinking and creativity.

With the evolution of technology and the explosion of the Internet, Websites, social media and online services are giving rise to new challenges for industry and consumers. International Standards can provide solutions.

The June issue of ISO Focus+ will explore these issues by highlighting key standards that are revolutionizing industry. One key player is joint technical committee ISO/IEC JTC 1, Information technology, which provides a solid ICT infrastructure, defining the basic structures which new technologies will build on. Examples of its work include bar code and RFID technologies. The impact of these standards is enormous. From helping the supply chain to track, acquire and manage data and information to identifying personnel, transactions and resources.

The issue also highlights the work of the ISO, IEC and ITU Moving Picture Experts group (MPEG), which created one of the most successful standards to date. Highly praised with several Emmy awards, MPEG has revolutionized the audio, video and multimedia experience of millions of people.

Innovation can also help build a more sustainable world. Examples of green plastics and carbon capture and storage showcase the importance of standards for the proliferation and development of these technologies.

Finally, the issue looks at ISO’s ongoing innovations in the standards developing process, aimed at meeting stakeholder requirements and responding to market needs, with the goal to be always faster, simpler and better.

To learn more about the benefits International Standards bring to innovation, don’t miss the next issue of ISO Focus+.

ISO Focus+ The electronic edition (PDF file) of ISO Focus+ is available free of charge on the ISO Website www.iso.org/isofocus+. In addition, the entire collection of previous issues of ISO Focus+ editions, plus ISO Focus (2004-2009), plus ISO Management Systems magazine (2001-2009) is also available free of charge as electronic files.

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 readers about the latest developments in the ISO world, including ISO member bodies’ CE 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.
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