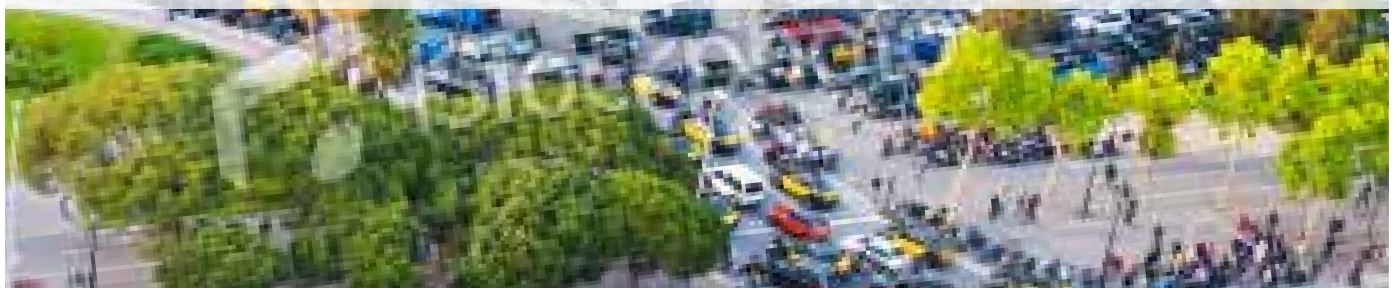




Crisis-proofing cities

ISO standards are making cities more resilient



by Åsa Kyrk Gere and Stefan Tangen

Can your city withstand incidents and emergencies, can it respond and recover, and can it save lives along the way? ISO/TC 223, *Societal security*, is addressing these issues and developing International Standards to boost urban resilience.

Our society is becoming more heterogeneous. This is creating larger and more complicated networks and makes us more vulnerable and dependent than before.

Complex networks lead to unforeseen dependencies between actors and across sectors. In turn, disruptions in these networks have unpredictable results which can quickly escalate and trigger larger, multi-sector

crises. For example, a relatively isolated electrical power cut in one part of a city can easily affect both that and other areas.

A multi-sector crisis places great demands on inter-organizational coordination and cooperation with other actors, as well as on prepared and trained organizations.

A network with many heterogeneous actors has many benefits and is not

necessarily negative. However, this does create unique risks when multiple actors depend on similar infrastructure.

ISO/TC 223 ...is developing International Standards to boost urban resilience.

In this situation, standards can provide processes to reduce dependencies and so increase organizational resilience. As more

of the city's actors improve their resilience, there is an aggregate effect across the entire network.

An inter-disciplinary approach helps to cope with the sensitivity of our complex society. This enables knowledge and practices to be shared and the positive effects of synergies to be realized. The result is a dynamic, adaptive and integrated approach towards global change, safety and security.

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The generic standards for individual organizations such as those produced by TC 223 are important prerequisites for the inter-disciplinary approach advocated above.

Organizations and sectors that rely on a network and each other can use these generic standards to assist with the coordination of business processes. The efforts and practices of each individual organization are aggregated across the network, increasing the resilience of both the network and the organizations that depend on it.

Below are a few of the issues that need to be addressed in a resilient city, and some of the ways in which our standards will help. It is important to note that TC 223 standards are produced for public and private organizations in areas such as: resilience, exercises, public/private partnership, emergency management, capability assessment, mass evacuation, and continuity management.



Preparing for the worst

Actors that have assessed, adapted and prepared their businesses for today's changing world will together build a more resilient city.

ISO 22316, *Societal security – Organizational resilience – Principles and guidelines*, guides businesses in developing an organizational capacity that is adaptive to changes and events. Often referred to as “resilience”, this capacity brings an internal culture that secures transformation and renewal during interactions and events.

Another essential preparation is a structured approach to manage the large and diverse risks that may cause an interruption.

ISO 22301, *Societal security – Business continuity management systems – Requirements*, and ISO 22313, *Societal security – Business continuity management systems – Guidance*, enable businesses to obtain services and implement continuity management to maintain operations. The standards provide a process to deal with and/or eliminate risks to protect their businesses and ensure the provision of electricity, water and other key services.

Preparations, plans and implemented processes contribute to appropriate awareness and development. Exercises are essential in preparations and make sure everything works properly. ISO 22398, *Societal security – Guidelines for exercises*, helps businesses to plan and carry out joint exercises and test their preparations, ability and capacity to deal with unexpected events.



Colour	Meaning	Suggestion
Red	Danger	Take appropriate safety action immediately
Yellow	Caution	Prepare for taking appropriate safety action
Green	Safety	No need to take safety action



Figure 1: Colour codes.

Effective emergency management

When disasters strike, it is important to protect people at risk. Without effective emergency management, lives will be lost and there may also be significant damage to a city's businesses and economy.

ISO 22320:2011, *Societal security – Emergency management – Requirements for incident response*, applies to all the private- and public-sector organizations that can be involved in incident response and enables them to work efficiently and effectively.

The standard outlines global best practice for establishing organizational structures and procedures for emergency management, decision support, traceability and information management. Interoperability among involved organizations is essential for successful incident response and overall emergency management.

ISO 22320:2011 also helps to ensure timely, relevant and accurate operational information by specifying processes, work systems, data capture and management. In addition, it establishes a foundation for coordination and cooperation, making

sure all relevant parties are closely aligned during a disaster, minimizing the risk of misunderstandings and securing a more effective use of combined resources.

People in the city need to be warned when something happens. ISO 22322, *Societal security – Emergency management – Public warning*, provides principles and generic guidelines for developing, managing and implementing public warning before, during and after incidents. This enables response organizations to alert their responders and at-risk people to take safety measures.

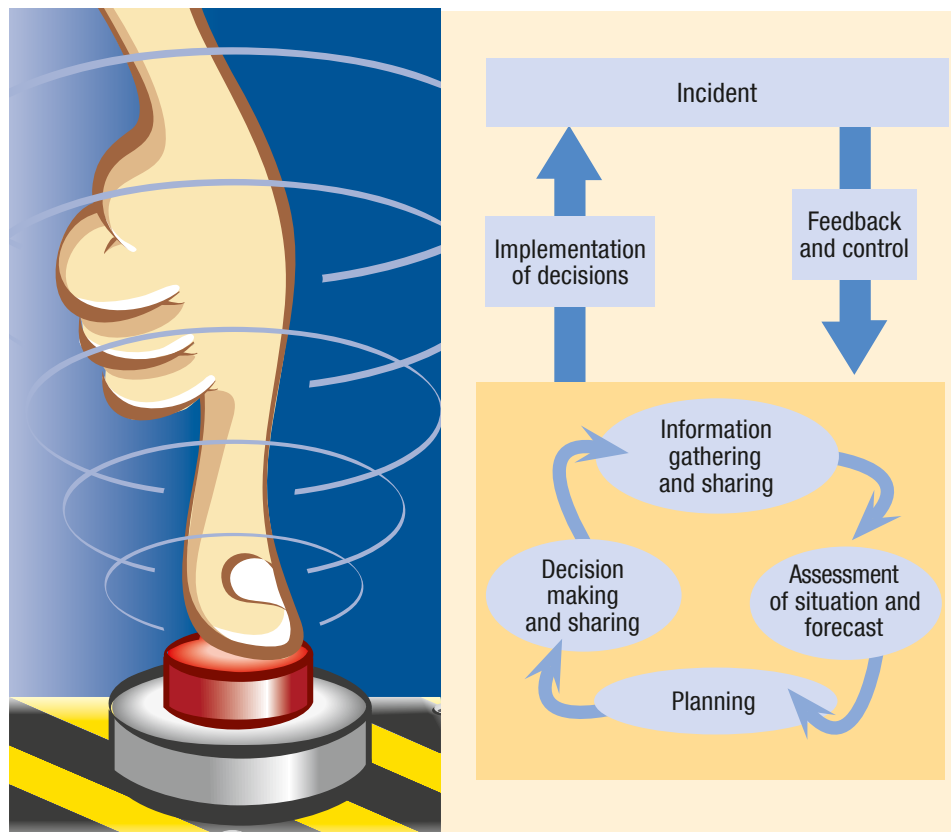


Figure 2: Example of the command and control process in a single hierarchical organization with limited coordination needs.



Often a specific message that requires practical action must be disseminated to a large group. Effective public warning can prevent a panic reaction and help response organizations to optimize their responses.

ISO/TC 223's standards provide some of the answers.

To warn the public effectively, pre-prepared colour-coded alerts can be used. ISO 22324, *Societal security – Emergency management – Colour-coded alert*, assists with drawing rapid attention to the severity of a situation so that people can respond

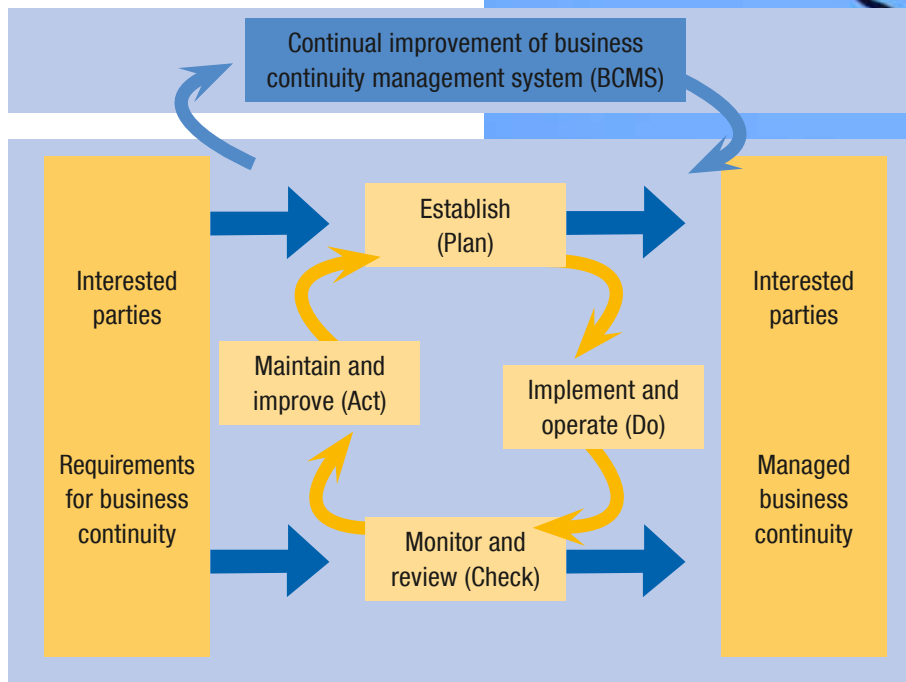


Figure 3: Management system for business continuity management.

accordingly. ISO 22324 standardizes alert colours to indicate the degree of danger, regardless of the type of hazard. These are mainly intended to help people – who may lack the expert knowledge about a particular hazard – maintain or increase their personal safety.

Greater resilience

Now that half of the world's inhabitants live in cities, we are faced with increasingly difficult issues linked to urban adaptation, climate change and societal security.

ISO TC 223's standards provide some of the answers and play a useful role in creating more resilient cities. ■

About the authors



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