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# Societal security — Guidelines for exercises and testing

*Sécurité sociétale — Lignes directrices pour exercice et essai*

ICS 03.100.01

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 22398 was prepared by Technical Committee ISO/TC 223, *Societal security*.

## Introduction

This International Standard describes the procedures necessary for planning, implementing, managing, evaluating, reporting and improving exercises, and the testing designs to assess the readiness of an organization to perform the mission. The organization should make maximum use of the controlled, risk managed environment of exercises and testing. Furthermore, practice for improvisation is only possible in the exercises and testing environment; once a real event occurs, the time for practice has ended.

Exercises and testing are important tools of management intended to:

- Build confidence in the management system and its programs and competence of the organization to protect and maintain assets: human, physical, environmental, and intangible by developing and implementing an effective, efficient, exercises and testing program as part of the organizations overall risk management activities; The interaction between the exercises and testing and the management system is described in Annex B;
- Serve to identify problems and solutions;
- Have aims in addition to measuring the competence of the organization to achieve the organization's objectives; and
- Create awareness and a culture of competency both individually and as an organization for the value of exercises and testing.

When plans have been reviewed and revised, exercises should be used to assess the revised plans and testing for changed programs.

Exercises and testing can have performance objectives in addition to measuring the competence of the organization to perform the mission. The additional objectives may include:

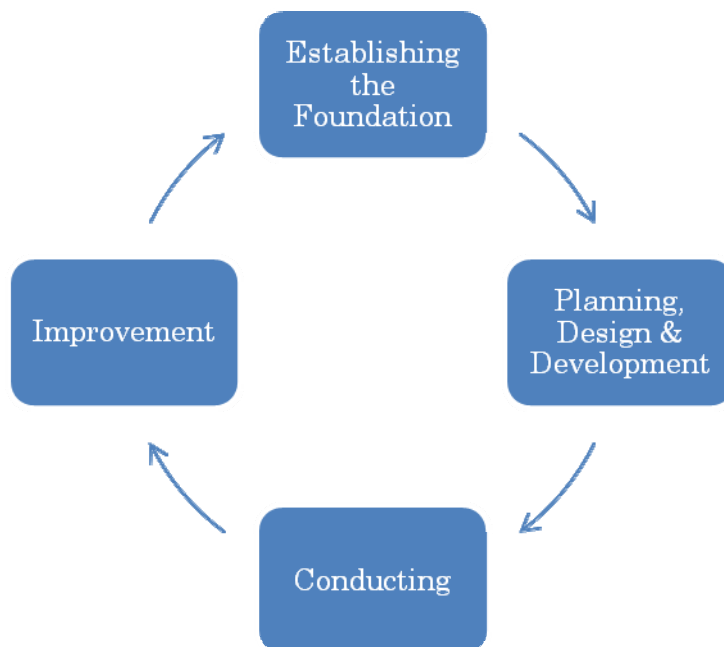
- **Orientation/demonstration:** a simulated experience of an expected situation with the intent of increasing awareness of vulnerabilities and the importance of effective action in response to the simulated conditions;
- **Learning:** the enhancement of acquiring knowledge, skills, or abilities by individuals or groups with the goal of mastery of specific competencies;
- **Cooperation:** providing an opportunity for people to work together to achieve a common end result
- **Experimenting:** try out new methods and/or procedures with the intent of refinement; and
- **Testing:** evaluating a method and/or procedure in order to assess which components are sufficiently developed.

Exercises evaluate people, processes and the acquisition of the competencies to support the program. Testing involves processes and events that test capability that may either pass or fail. For instance, one may test whether a generator works when required whereas one may exercise the response team and train the members to manage an emergency relocation. These are not mutually exclusive; indeed, an exercise may contain testing or elements of training within it.

Exercises and testing are excellent ways to demonstrate organizational resolve to build and maintain competence to support the mission. The organization should establish policy that includes exercises and testing and the implementing procedures that will lead to corrective action. The organization should: (1) develop exercise performance objectives to define the direction and scope of exercises and testing, and, (2)

implement the procedures that trigger a review based on the critique-of an exercise, test, and actual events. Scenarios should reflect the objectives of the exercise.

The standard follows the Plan-Do-Check-Act format as displayed in Figure 1.



**Figure 1 – Plan-Do-Check Act format of the standard**

# Societal security — Guidelines for exercises and testing

## 1 Scope

This International Standard recommends good practice and guidelines for an organization to plan, perform and improve its exercises and testing activities and programmes.

This International Standard is applicable to all organizations regardless of type, size and nature of business whether in the private, public, or not-for-profit sectors. The guidance can be applied in varying degrees of formality depending upon the needs, resources, and constraints on the exercises and testing program.

This International Standard is intended for use by anyone with responsibility for ensuring the competence of the personnel of the organization, particularly the leadership of the organization and those responsible for managing an exercises and testing program.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

*ISO 22300, Societal security – Terminology*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22300 and the following apply.

### 3.1

#### **after-action report**

document which records, describes and analyses the exercise, drawing on debriefs and reports from evaluators, participants, and observers derives lessons from it.

[SOURCE: ISO 22300]

NOTE 1 The report should also include recommendations to close gaps identified in the exercise

NOTE 2 Post-exercise report is also called post exercise report or final exercise report.

### 3.2

#### **competence**

demonstrated ability to apply knowledge and skills to achieve intended results

### 3.3

#### **drill**

activity which practices a particular skill often involves repeating the same thing several times

EXAMPLE A fire drill to practice safely evacuating a building on fire.

[SOURCE: ISO 22300]

**3.4  
evaluation**

systematic process that compares the result of measurement to recognized criterion to determine the gap between intended and actual performance

NOTE The gaps are inputs into the continual improvement process.

**3.5  
exercise**

process to train for, assess, practice, and improve performance in an organization

NOTE 1 Exercises and can be used for: validating policies, plans, procedures, training, equipment, and inter-organizational agreements; clarifying and training personnel in roles and responsibilities; improving inter-organizational coordination and communications; identifying gaps in resources; improving individual performance; and identifying opportunities for improvement, and controlled opportunity to practice improvisation.

NOTE 2 A test is a unique and particular type of exercise, which incorporates an expectation of a pass or fail element within the goal or objectives of the exercise being planned.

[SOURCE: ISO 22300]

**3.6  
exercise annual plan**

document in which the exercise policy plan has been translated to exercise aims, exercises, and in which exercise agenda or exercise calendar for a certain year are reflected

[SOURCE: ISO 22300]

**3.7  
exercise campaign**

series of recurrent exercises with a common generic organizational structure

**3.8  
exercise coordinator**

person responsible for planning, execution, and evaluation activities of an exercise

NOTE This person is also responsible for the cooperation among internal and external entities.

**3.9  
exercise programme**

series of exercise events designed to meet an overall objective or goal

**3.10  
exercise safety officer**

person tasked with ensuring that any actions during the exercise and testing are performed safely

NOTE 1 Usually relevant to a "live play" exercise.

NOTE 2 The Exercise Safety Officer should be involved from the planning of the exercise and testing until after the debriefing

[SOURCE: ISO 22300]

**3.11  
exercise method**

describes how the exercise is conducted



**3.12****exercise type**

describes the function or activity the exercise is to address, *what* is to be exercised

**3.13****full-scale exercise**

exercise which involves multiple organizations or functions and includes actual activities

[SOURCE: ISO 22300]

**3.14****functional exercise**

exercise to train for, assess, practice, and improve performance of single functions designed to respond to and recover from an unwanted event

NOTE Functions could include an emergency operations center (EOC) team or crisis management team or fire fighters decontaminating mock victims

[SOURCE: ISO 22300]

**3.15****hazard**

source of potential harm

NOTE Hazard can be a source of risk.

**3.16****improvisation**

act of inventing, composing, or performing with little or no preparation as reaction to the unexpected

**3.17****interested party**

person or organization that can effect, be effected by, or perceive themselves to be affected by a decision or activity

NOTE 1 A decision maker can be a stakeholder.

NOTE 2 An interested party is also called as stakeholder.

**3.18****inject**

scripted piece of information inserted into exercise designed to elicit a response or decision and facilitate the flow of the exercise

**3.19****observer**

exercise participant who watches selected segments as they unfold while remaining separate from role player activities

NOTE Observers play a crucial role in the debriefing and reporting process after an exercise. The term is also used for "VIP observers", who usually visit the exercise for only a short time, largely for internal or external PR purposes, and do not take part in the debrief.

**3.20****post-exercise report**

document which records, describes and analyses the exercise, drawing on debriefs and reports from observers, and derives lessons from it

NOTE Post-exercise report is also called after action report.

**3.21**

**risk**

effect of uncertainty on objectives

NOTE 1 An effect is a deviation from the expected - positive and/or negative.

NOTE 2 Objectives can have different aspects (such as financial, health and safety, and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product, and process).

NOTE 3 Risk is often characterized by reference to potential events, consequences, or a combination of these and how they can affect the achievement of objectives.

NOTE 4 Risk is often expressed in terms of a combination of the consequences of an event or a change in circumstances, and the associated likelihood of occurrence.

NOTE 5 Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of an event, its consequence, or likelihood.

[SOURCE: ISO Guide 73]

**3.22**

**safety**

status or condition of people, property, information and operation being protected against or from intentional, unintentional human act or natural disaster

**3.23**

**scenario**

pre-planned storyline that drives an exercise, the stimuli used to achieve exercise objectives

**3.24**

**scope of exercises and testing**

magnitude, resources, and extent which reflects the needs and gaps

**3.25**

**script**

story of the exercise as it develops which allows directing staff to understand how events will develop during exercise play as the various elements of the master events list are introduced

NOTE The script is often written as a narrative of simulated events.

**3.26**

**strategic exercise**

exercises involving top management at a strategic level

NOTE 1 Strategic level top management typically includes inter-ministerial crisis personnel, political-administrative personnel, cross sector and cross departmental management personnel, and the crisis management organization of the corporate management team

NOTE 2 Strategic exercises are designed to assess reactions to crisis in extreme situations

NOTE 3 Strategic exercises are designed to develop a comprehensive coordination and decision-making culture in organizations in the public, private, and not-for-profit sectors

[SOURCE: ISO 22300]

**3.27**

**testing**

procedure for determining the presence, quality, or veracity of something

NOTE 1 Assessing a capability with the result being either pass or fail

NOTE 2 Testing may be referred to as a “trial”

NOTE 3 Testing is often applied to supporting plans.

NOTE 4 Testing should start with simple component testing building toward system testing.

NOTE 5 Test and testing are terms that are often used interchangeably with the terms exercise and exercising, but it is suggested that there is clear and distinct difference between the two sets of terms. However, it is suggested that tests and testing all present learning, education, training and awareness opportunities for all participants, as the participants will be performing functions and activities that would need to be performed in the response phase to an actual incident or emergency.

NOTE 6 For the purposes of this standard, a test, and where appropriate, testing; are treated as an exercise with a distinct and clear additional factor, which is a defined and objectively measured expectation of a pass or fail outcome, as either a main objective or aim, or as a subsidiary objective or aim of the event. An example of this could be a disaster recovery test, where the connectivity of two geographically dispersed systems could be physically validated with a third system to prove that the systems have adequate resilience to address the risk under consideration.

NOTE 7 It follows that any exercise may be designated as a test by the commissioning party and the method that the exercise is delivered in becomes irrelevant, the key issue is whether or not there is a pass or fail expectation in any of the objectives or aims.

NOTE 8 When considering whether an event should be considered as a test or testing, it should be borne in mind that objective pass or fail expectations may be applied to plans, processes, systems, activities and performance, including, where appropriate, to humans or teams and groups of people.

[SOURCE: ISO 22300]

### **3.28 training**

activities designed to facilitate the learning and development of knowledge, skills, and abilities, and to improve the performance of specific tasks or roles

[SOURCE: ISO 22300]

### **3.29 management**

coordinated activities to direct and control an organization

NOTE In English, the term “management” sometimes refers to people, i.e. a person or group of people with authority and responsibility for the conduct and control of an organization. When “management” is used in this sense, it should always be used with some form of qualifier to avoid confusion with the concept “management” defined above. For example, “management shall...” is deprecated whereas “top management (3.29.2) shall...” is acceptable.

### **3.30 top management**

person or group of people who directs and controls an organization at the highest level

## **4 Establishing the foundation**

### **4.1 Needs and gap analysis**

The organization should perform a needs and gap analysis with the expected outcomes:

- establish the need for exercises and testing;
- build the foundation including the aim for the development of exercises and testing;
- recognize the role of exercises and testing in managing the risks to the organization; and

- accept the need to manage the risks of conducting exercises and testing.

Each individual exercise requires planning and preparation and the organization should therefore manage each exercise as a project.

The level of planning and preparation will vary depending upon the requirements for the exercise and the constraints that will affect the process.

During the exercise planning process, the organization should decide:

- the type of the exercise;
- type and number of participants;
- general scenario;
- time and location for the exercise;
- financing; and
- a preliminary time table.

In advancing the exercises and testing strategy and objectives, the organization should develop specific exercises and testing activities that take into account the risk issues, constraints on developing and conducting these activities, geographic boundaries, and interested parties. The organization should follow a systematic process of planning, conducting, and evaluating exercises and testing from start to finish.

A Business Impact Analysis (BIA) may help to identify mission-critical business processes or units and their dependencies to resources e.g. IT-applications, service providers or information which have to be exercised or tested in a more frequent or detailed level.

NOTE ISO 22301 provides details on conducting BIA.

Annex A provides a series of questions to assist in conducting the needs and gap analysis.

## **4.2 Base of support**

The organization should secure a base of support and commitment from the management, participants and stakeholders.

The organization should base the benefits of the exercise on the needs and gap analysis and clarify the benefits to those who are carry responsibility for the exercise.

A base of support to the exercise and its exercise management team will be important also in order to ensure that the exercise aims and performance objectives correspond and run parallel to the overarching strategy of the organization.

Top management should give the exercise management team a clear mandate and full authority to carry out the planning, execution, and evaluation of the exercise. The benefits and advantages of the proposed exercise should be clearly explained and presented to the appropriate decision makers such as exercise coordinator, controllers, evaluators, and exercise safety officer.

## **4.3 Framework**

An exercise project may require involvement at different levels; ranging from cooperative level, top management level, middle management level to executing level. On the cooperative (inter-organizational) level, top management levels from two or more organizations recognizes the overall benefit of conducting a

cooperative exercise. They identify areas and capabilities that need to be cooperatively exercised. When applicable this level also identifies the common exercise design for the organizations.

Top management should identify policy areas and competence capabilities that need to be exercised and set the overall conceptual framework for exercises.

The organization should establish an exercise framework that sets priorities and balance organizational requirements vs. costs, and other constraints. The framework should be based on the needs and gap analysis. The identified need will also include the establishment of procedures or plans that require practice or improvement and that are therefore to be exercised.

This will be a basis for setting exercise performance objectives. The organizations target maturity level, coupled with the capability development needs that have been identified will provide the general direction of the exercise. The scope of resources available for exercises will also be set at this level. Establishing this base of support indicates that an exercise's *purpose* and *performance objectives* are concurrent with the organizational aims and performance objectives

On the middle management level, those responsible for planning the exercise should drive the planning process of the exercise forward within the overall framework as developed by the top management. Exercise planning is a task for those individuals that are ultimately responsible for the exercise. As a primary focus, the middle management level should ensure that the exercise performance objectives are clear and understood by all. The planning process at the middle management should be granted the appropriate mandate and authority to be able to carry out their responsibilities, including:

- Setting a timeline for the exercise planning process;
- Drafting general scenario, aims and performance objectives for the exercise;
- Identify target audience and participants;
- Scheduling activities location, date, time, and duration of the exercise;
- Defining the exercise control and preparing all documentation and exercise materials;
- Identify specific measures that require practice, training, review, or improvement;
- Developing the scenario, rules, tools and training materials;
- Planning the evaluation process.

To the extent possible, those planning the exercise should not be players in the exercise, as their prior knowledge adds an unrealistic layer of information that distorts the learning process for the other exercise players.

Depending on the type of exercise selected by the middle management level, the exercise team will require a specific setup and varying number of staff. There may be substantial personnel overlap among all three levels, as individuals from the top management level may be the same as in the middle management or executing levels, all depending on the scope of the exercise.

Risk management is essential for the exercise project. There is a need to perform risk assessments along the steps within the planning process.

NOTE ISO 31000 provides guidance on Risk management.

#### 4.4 Scope of exercises and testing

The organization should develop a scope based on the needs and gap analysis. The scope should provide a unifying statement to achieve the aim and performance objectives.

## 4.5 Exercises within the management system

When implementing a management system, the organization's stakeholders, both internal and external, are not only affected by the management system but their role performance will have a major impact on the success of its implementation. In regards to many of the stakeholders, there are roles to be performed and responsibilities to be assumed in order for the whole organization to function effectively. In most of the cases, the ability of the stakeholders to apply the relevant and acquired knowledge, skills, and abilities to achieve the required level of awareness and perform their roles and assume their responsibility as defined by the organization will have a major impact on the performance of the organization.

The interaction between the exercises and testing and the management system is described in Annex B.

## 4.6 Planning document

The organization should summarize the work described in Clause 4 in a planning document. The document should include the information needed to conduct the planning process; purpose of the exercise, limits, funding base line.

# 5 Planning and design

## 5.1 Planning

### 5.1.1 Developing aim and performance objectives

#### 5.1.1.1 General

The organization should define an aim for the exercise (i.e. a broad general statement of what participants are expected to learn). The aim should clarify why the exercise is being conducted and the reason for the exercise.

An exercise can be designed to:

- train the participant in order to provide the individuals, organizations and systems an opportunity to gain knowledge, understanding and skills;
- test the theories, skills, new organization or equipment and this way identify the strengths and weaknesses;
- unbiased developing activities, abilities and ideas; and
- measure the knowledge, ability, endurance (time) or capacity.

The organization should establish exercise performance objectives for every exercise. The exercise performance objectives should provide a framework for scenario development, guide individual organizations' objective development, and inform exercise evaluation criteria. Entities should frame the exercise performance objectives with the aim of attaining capabilities established as priorities. The exercise performance objectives should reflect specific capabilities that the exercising entity establishes as priorities, and the tasks associated with those capabilities. The exercise performance objectives should be simple, measurable, achievable, realistic, and task-oriented.

The exercise performance objective should describe *what* is to be achieved with the exercise. Performance objectives are usually more specific statements of what the participants are expected to learn and be able to do upon completion of the exercise.

When establishing the performance objectives it should be remembered that they will have to be subject to validation and used to develop evaluation criteria.

It is important that the person(s) who will evaluate the exercises and testing take part in the process of setting up and development of exercise performance objectives.

In order to make it possible to evaluate the exercises and testing as a project, each activity and process within the exercises and testing: planning, preparation, implementation and evaluation, should also have a defined and clear aims and performance objectives of their own, reflecting the overall aims and performance objective of the exercises and testing.

Exercise performance objectives should contain four parts:

- a) **Participant:** Exercises performance objectives should contain a specific statement of the participants (in larger exercises, the participants could be teams or functional unites), performance that is expected of the participants, conditions under which the expected performance is expected to occur, and the criterion by which the performance is evaluated.
- b) **Performance:** An exercise performance objective must state exactly what performance is desired and expected.
- c) **Condition:** The “condition” is the specific circumstance under which the expected, desired performance will occur.
- d) **Criterion:** The criterion is the standard that is used for comparison to determine if the observed performance is correct. Each organization should identify the criterion that will be used to compare the observed performance to set measurable standards for the specific performance. If the organization does not have established standards for performance, the standards must be developed, approved, and promulgated by the organization.

#### 5.1.1.2 Unobservable, required performance

All human functions are important in performance to support the mission, including those human functions, such as understanding, knowing, and thinking, all of which are not directly observable or measurable. The human functions are called cognitive functions. Exercises and testing may involve assessing the acquisition of knowledge and the demonstration of cognitive skills and functions. If the assessment of cognitive functions is needed during exercises and testing, the organization should use indicator performance objectives. The indicator performance is a predictor that the cognitive functions can be performed competently because direct measurement is not possible. When the performances involve mental functions, indicator behaviour must be used to determine if the performance of the mental functions meets expectations of an individual based on its educational and cultural background.

#### 5.1.1.3 Review of performance objectives

After the exercise is launched, the exercise performance objectives may need some alteration to achieve the aim of the exercise. Any changes should be implemented with caution to avoid confusion.

### 5.1.2 Team management

#### 5.1.2.1 General

The organization should form an exercise management team for all exercises with the number of team members dependent upon the type and method of exercise and available resources.

Depending on the scope of the exercise, the organization should identify the roles needed to perform the exercise and allocate responsibilities to competent individuals. The roles in the exercise management team should include:

- an exercise coordinator;
- a documentation coordinator;

- controllers;
- evaluators; and
- an exercise safety officer.

**Note** Even small organizations should assign a team to plan and conduct exercises. The team may be as small as three members, or as large as necessary to handle all of the details involved with large, joint exercises.

### 5.1.2.2 Team development and responsibilities

The exercise coordinator should identify the need for additional training for the exercise management team before the conducting an exercise or test. The exercise coordinator should develop pre-exercise briefing materials.

### 5.1.2.3 Competence

The organization should make sure that the personnel possess the necessary Knowledge, Skills, and Abilities (KSAs) and the competence to correctly perform using those KSAs. The organization should use exercises and testing to evaluate competence by measure and compare to accepted criterion. Competence means that personnel not only possess the desired KSAs but can demonstrated ability to apply knowledge and skills to achieve intended results.

The organization should develop exercise performance objectives that identifies the competencies needed in evaluators. In a multi-organizational exercise, identification of the required competencies should occur during exercise planning meetings.

### 5.1.2.4 Managing the exercise process

Project management is a useful methodology which helps to organize the process of planning, conduction and evaluating an exercise project in a systematic and permanently controlled manner. By using the project method the distinction between exercise and exercise project is introduced and must be obeyed throughout the whole document: An exercise is viewed as a "product" which is realized in the phase "conducting" of the "process" (life cycle) of an exercise project with the main phases of planning, preparation, execution and evaluation.

No matter how many people are involved in planning, one person must be in charge. The same person who has overall responsibility for planning and executing the exercise should be the chair of the planning committee. All organizations that will participate in the exercise should have at least one member on the exercise management team.

People who experienced in planning exercises should be consulted for recommendations on size of exercise management teams, number of sub-teams, and length of time that should be allotted for planning and conducting exercises.

The extent of exercise play which reflects the exercise performance objectives will directly affect the length of time from exercise conception to final report. As a rule of thumb, the greater the number of exercise performance objectives, the longer the process will take.

### 5.1.3 Risk management and information security

The aim of the exercise can be affected and the lasting impact may be other than intended if a participant or observer is harmed as a direct result of the exercise activity.

The organization should eliminate or reduce risks through the effective use of risk analysis and treatment.



The organization should determine and manage the security of all exercise documentation in accordance with the policy of the organization.

#### 5.1.4 Environmental aspects

The organization should, where appropriate, consider to assess environmental impacts and minimise any potential impacts. This should be done by the exercise coordinator during the early stages of the exercise planning. The environmental impact of the exercises activities should be assessed and analysed and the results should be documented and considered during the exercise planning, (preparation), implementation and evaluation. It is also important that the information on measures taken in order to minimise the environmental impacts are being communicated to those involved in the exercise.

**EXAMPLE 1** During the planning phase there are eight physical meetings to be held in a place not accessible by public transportation. Consider planning some of physical meetings through videoconference.

**EXAMPLE 2** The implementation phase includes field operations. According to the environmental assessment there is a risk of leakage of hazardous fluids from the “dummy” vehicle which is being used for the exercise. The risk of the environmental impact can be eliminated if the provider of the “dummy” vehicle is required to empty the vehicle any hazardous fluids before delivering it to the exercise site.

#### 5.1.5 Gender and diversity aspects

The exercise coordinator should keep in mind gender and diversity aspects as cross-cutting matter during the whole exercise life cycle: planning, (preparation), implementation and evaluation.

**NOTE** The environmental, gender and diversity aspects should also be included in exercise evaluation. The results should be documented and “lessons identified” reported.

**EXAMPLE 1** Make sure that role-players represent the full range of potential “victims”, including elderly, children and disabled. Sex, age, ethnicity, culture and religion should be considered as well.

**EXAMPLE 2** The facilities on the site should be suitable and available for use for all individuals.

#### 5.1.6 Logistics

The organization should manage logistical details as a part of the exercise process.

Sound management of logistic details can make the difference between a well-run exercise and an exercise that is confusing and ineffective.

The logistics of discussion-based and operations-based exercises may include proper meeting and briefing arrangements, registration signs, on-site communications including exercise coordination channels, site security and strict observation of safety precautions.

#### 5.1.7 Exercises and testing communication

##### 5.1.7.1 General

The protocol for communication during exercises and testing should be similar to the normal communication an exercise organization uses to manage the processes and administration. Testing communication flow should be included in the list of exercise performance objectives for all exercises and testing.

Top management should develop a strategy to implement its exercises and testing communication policy. The strategy should include communication performance objectives, identification of interested parties, an indication of when and what it plans to communicate, and a management commitment to allocate adequate resources. The organization should clarify what is possible, taking into account its resources so that it can best and most realistically meet the expectations of interested parties.

Consideration should be aligned with other elements of management systems, policies, strategies or relevant activities.

When developing the communication strategy, the questions below can be helpful.

- Why is the organization engaging in exercises and testing communication and what are its purposes?
- What are the organization's key risk issues and impacts?
- What are the main issues to be covered, messages to be conveyed, and communication techniques, approaches, tools and channels to be used?
- How much time is needed to implement the strategy?
- How will the strategy involve and coordinate the risk managers, interested parties, individual(s) responsible for risk management issues and individual(s) who are responsible for the organization's internal and external communication?
- What are the local, regional, national and international boundaries for the strategy?

Once defined, top management should approve the strategy and use it as the basis for the organization's exercises and testing communications activities.

#### **5.1.7.2 Establishing exercises and testing communication performance objectives**

The organization should set exercises and testing performance objectives, which are useful because they can provide the basis for an effective communication strategy. When setting its communication performance objectives, the organization should ensure that they are aligned with its management system communication policy, take account of the views of internal and external interested parties, and are consistent with the management system communication principles. On setting performance objectives for its exercises and testing communication activities, the organization should consider its priorities and desired results, making sure that the performance objectives defined are expressed in such a way that the sensitivity and integrity of its information is protected.

Priority considerations for setting performance objectives may include:

- risk issues related to the organization's specific activities, products and services;
- complying with applicable legal requirements and with other requirements to which the organization subscribes;
- providing information and encouraging understanding by interested parties about the exercises and testing activities, aspects, impacts and performance of the organization;
- meeting the information expectations of interested parties;
- minimizing internal and/or external conflicts;
- improving the organization's credibility and reputation;
- improving public knowledge and the image of the organization's products and services; and
- stimulating innovation and creativity.

#### **5.1.7.3 Identifying interested parties**

In developing the exercises and testing communication strategy and setting performance objectives, the organization should identify internal and external interested parties who are impacted by and/or who have

expressed an interest in its activities, products, and services. It should also identify other potential interested parties with whom it wishes to communicate to achieve the overall performance objectives of its exercises and testing communication strategy.

Some examples of interested parties that could be considered by an organization include:

- first responders and emergency management personnel;
- past, present and future employees and their representatives;
- customers and consumers;
- suppliers, contractors, wholesalers and distributors;
- competitors;
- banks and financial/investment community;
- insurance companies, rating agencies;
- public authorities;
- legislators;
- regulators;
- politicians and opinion leaders;
- neighbors and local community;
- communities associated with supply chain organizations;
- schools, academics and researchers;
- professionals involved in environmental, health, and safety issues;
- media organizations; and
- non-governmental organizations.

It is not uncommon to identify conflicting interests among different interested parties. As a result, the exercises and testing activities should address and respond to different and often conflicting demands from interested parties, in particular those that are the most influential and who may negatively impact the outcomes of an exercises and testing activity.

When undertaking an exercises and testing activity, the organization should seek to comprehend the expectations and perceptions of interested parties with respect required competencies to perform the organizational mission. Direct dialogue between interested parties and the organization may generate the feedback required. If the organization is seeking input from interested parties, it should explain why it is seeking information, and what it plans to do with the information obtained.

#### **5.1.7.4 Considering resource issues**

An organization's exercises and testing communication activities are dependent upon available resources. The exercise and testing communication strategy should include an allocation of human, technical and financial resources, designated responsibilities and authority, and defined actions. Employees' experiences and training needs should be considered.

### 5.1.8 Resources

Several resources are to be handled during the project; finance, time, participants, facilities and area. The costs of the exercise, in terms of general costs, expenses and resources are to be established prior to initiating the exercise planning process. The amount budgeted for an exercise should be based on analysis of the type and scale of exercise required to achieve the anticipated exercise aims and performance objectives. This analysis should take into consideration which staff, systems, tools and other costs that are involved in the exercise. The exercise management team have a responsibility to monitor expenditures and update their budgets routinely to ensure that the amount allocated to an exercise is sufficient to attain the exercise aims and performance objectives.

The timetable of the exercise as well as the time that the exercise will demand from both exercise management and exercise participants are to be considered at an early stage in the planning process. All exercises require that sufficient time is allocated to planning as well as conducting and evaluating the exercise. The time and resources that the exercise will require are ultimately determined by the exercise aims and performance objectives.

The exercise timetable should include the following:

- date and time of the exercise;
- duration of the exercise;
- deadlines (for the various planning and preparation activities: exercise aims and performance objectives, scenario, evaluation, etc.);
- estimate of man-days required for the exercise.

Since an exercise requires considerable time and resources, it is recommended that exercise participants are “booked” early on. Resources are required in each phase of the exercise. For example, resources can include; specific positions within the organization, persons with specific knowledge or education etc. Essentially, the amount of resources required is determined by the scope of the specific exercise.

Some individuals may be in need of education or specific training prior to the exercise in order to be able to benefit fully from the exercise. New staff members may require a pre-exercise orientation in preparedness plans and routines.

Depending on the type of exercise, it might be needed more or less logistics. The specific materials, equipment and facilities needed for the purposes of carrying out the exercise will be determined by those planning the exercise as they develop the scenario. The area for the exercise is also to be specified. A logistics coordinator/team may be appointed responsible for gathering all supplies, materials, equipment, services and facilities required for carrying out the exercise.

## 5.2 Design and development

### 5.2.1 General

The organization should design and develop the exercise based on the exercise foundation and focus on identifying exercise performance objectives which facilitate evaluation, designing the scenario, creating documentation, managing logistics, planning exercise conduct, and selecting a focus for improvement planning.

### 5.2.2 Selecting the type of exercises and testing

The organization should select the type and method of exercise that will meet the performance objectives and recognizes the constraints under which the exercises and testing will be developed and conducted. An exercise might be a combination of these types, not just one. For instance, a functional exercise may also

contain several drills. Annex F provides information on the various types of exercises that may be used to improve organizational and individual competence.

### 5.2.3 Exercise types

The organization should determine the type of the exercise according to the aims and performance objectives, as well as the size and the magnitude of the exercise.

The most common types of exercises are:

- a) **Alert exercise:** The purpose of an alert exercise is to test the organization by alerting the involved participants and getting them to arrive at the designated place within a certain time. It can also be used to test an alert mechanism. This type of an exercise is primarily applied to the staffing within own organization, but it may also be applicable to other contexts.
- b) **Start exercise:** A start exercise usually builds up on the alert exercise by testing how fast the emergency management organization can be activated and can start carrying out their tasks. A start exercise is therefore a means to test and developing the ability to get started with a crisis management.
- c) **Staff exercise:** A Staff exercise is designed to increase the ability to work with internal processes, staff and information routines in order to create a common operational picture and suggest decisions.
- d) **Decision exercise:** A decision exercise is primarily used to exercise decision making process within an organization, e.g. the ability to take fast and clear decisions on actions and to initiate cooperation between those responsible and stakeholders, under a time pressure.
- e) **Management exercise:** This type of an exercise is a combination of alert exercise, start exercise, staff exercise, decision exercise and system exercise. The focus is often on the roles, organization, SOPs, etc.
- f) **Cooperation exercise:** This is a type of an exercise where coordination through cooperation between management levels is being exercised. A cooperation exercise can be carried out both, in large and small scales. A cooperation exercise may consist of:
  - "Vertical" coordination (between national, regional and local levels);
  - "Horizontal" coordination;
    - In a sector where public and private stakeholders participate,
    - Among several sectors in the society.
- g) **Crisis management exercise:** A crisis management exercise simulates crisis conditions and provides for the opportunity for people to practice their roles and gain proficiency in the roles of the crisis management plan.
- h) **Strategic exercise:** Strategic exercise refers to comprehensive exercise activities at strategic level (e.g. inter-ministerial crisis staff, political-administrative staff, cross-sector and cross-departmental management staff, crisis management organization of corporate management), which aims are:
  - improving the integrated crisis reaction ability in exceptional threat and danger situations (crisis situations) and
  - developing a comprehensive coordination and decision culture in organizations of the public, private, or not-for-profit sectors.

Annex D provides information on strategic exercises.

NOTE Strategic exercises may also be called "strategic crisis management exercises"

- i) **Exercise campaign:** An exercise campaign is a series of recurrent exercises with a common generic organizational structure.

## 5.2.4 Exercise methods

### 5.2.4.1 General

Seven exercise methods in two categories are identified.

NOTE 1 Most types of exercise can be carried out by using one or several methods.

NOTE 2 Terms that are used to name exercise methods and types differ throughout the world.

NOTE 3 In some cases in this standard, different terms are listed for the same exercise type or method. Annex C provides more detail on exercise types and methods.

Any type of exercise is conducted using one or a combination of several methods.

### 5.2.4.2 Discussion-based exercises

- a) **General:** Discussion based exercises familiarize participants with current plans, policies, agreements, and procedures, or may be used to develop new plans, policies, agreements, and procedures. Types of Discussion-based Exercises include:

NOTE Discussion-based exercises are also called “dilemma exercises”.

- b) **Seminar:** A seminar is an informal discussion method, designed to orient participants to new or updated plans, policies, or procedures. Seminars are unconstrained by real-time simulation of events and are facilitated by an experienced presenter. Organizations may use seminars as an initial organizing point when plans or programs are being revised or developed (e.g., a seminar to review and revise a procedure that proved difficult to implement during a recent actual disruptive event.).
- c) **Workshop:** Workshops resemble seminars but differ in two ways: participant interaction is increased, and the focus is on achieving or building a product, such as e.g., new standard operating procedures, emergency operations plans, multi-year plans, or improvement plans. (e.g., a workshop used to develop a Multi-Year Training and Exercise Plan)

NOTE Workshops are often employed during exercise development to write exercise performance objectives and scenarios.

- d) **Tabletop exercise (TTX):** A tabletop exercise will include key personnel discussing simulated scenarios that involve a disruptive event in an informal setting [around a table]. Tabletop exercises can be a tool to build competence and support for a revised plan or procedure; or, review plans, policies, and procedures or to assess the systems needed to respond to undesired situations. Participants are expected to discuss the issues that result from the simulated events and develop decisions through paced problem solving. Tabletop exercises can be timed with expected rapid decision making or untimed allowing for in depth discussion and development of solutions. Usually, untimed tabletop exercises are used first and timed second.

NOTE 1 Tabletop exercise (TTX) are also called “dilemma exercises.”

NOTE 2 “TTE” is also used as an abbreviation for a tabletop exercise.

- e) **Games:** A game is a simulation of operations that often involves two or more teams, usually in a competitive environment, using rules, data, and procedures designed to depict an actual or assumed real-life situation.

NOTE Games are also called “media simulations” and “virtual operations”.

### 5.2.4.3 Operations-based exercises

Operations-based exercises validate plans, policies, agreements and procedures; clarify roles and responsibilities; and identify resource gaps in an operational environment.

NOTE Operations-based exercises are commonly employed using an approach in which one type of exercise builds upon another. Functional exercises builds upon drills and full-scale exercises build upon functional exercises.

- a) **Drill:** A drill is a coordinated, supervised activity usually employed to test a single specific operation or function in a single entity or multi-organization team (e.g., a fire department conducts a decontamination drill or an EOC team conducts a communications drill).

NOTE 1 Drills can be used to provide training on new equipment, develop or validate new policies or procedures, or practice and maintain current skills. If drills are used for purposes of orientation to new policies or procedures or for training, a follow-up drill is needed to assess competence.

NOTE 2 Drills are also called procedures exercises.

- b) **Functional exercise (FE):** A functional exercise examines and/or validates the coordination, command, and control between various multi-agency coordination centers (e.g., emergency operation center, joint field office, etc.). A functional exercise simulates real operating environment using complex and realistic problems that require rapid and effective responses. Functional exercises are usually used to assess trained personnel in a stressful, time-dependent mode.

NOTE Functional exercises (FE) are also called procedures exercises.

- c) **Full-scale exercises (FSE):** A full-scale exercise is a multi-agency, multi-jurisdictional, multi-discipline exercise involving functional (e.g., joint field office, emergency operation centers, etc.) and live action response (e.g., fire fighters decontaminating mock victims). The FSE is the most complex method of exercise. FSEs are conducted in real time, creating a stressful, time-constrained environment that closely mirrors real events.

NOTE Full-scale exercises are also called "boots on the ground" exercises.

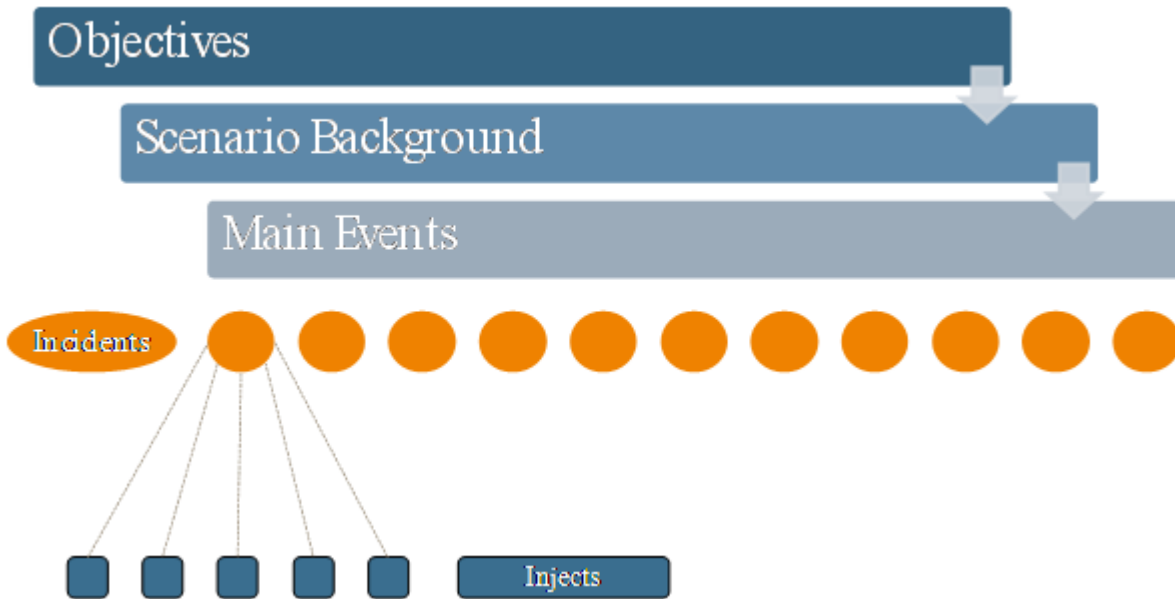
## 5.2.5 Preparing scenarios

### 5.2.5.1 Structure the scenario

The organization should structure the scenario in a logical, readily accessible way to the exercise players. Usually such a systematic structure is achieved by constructing the scenario on three levels: events, incidents and injects.

When the scenario is developed, the exercise should not become too complex and overburdened by details. On the other hand, the exercising staff should be challenged enough. In any case, the scenario has to be extraordinary enough to make decision-making and management procedures during the crisis necessary, which are linked in an interdisciplinary way and inter-divisionally coordinated.

Figure 2 shows an example of a generic breakdown of an exercise.



**Figure 2 – Generic breakdown of an exercise**

**5.2.5.2 Events**

Events describe the general contents of the exercised scenario. In other words, the events provide a general overview of the scenario.

The number of events depends on the performance objectives and aims of the exercise. In some cases, especially with greater duration simulation exercises, several independent events are required in order for the aims and performance objectives of the exercise to be achieved. Too many independent events, however, decrease the realism of the scenario and should thus be avoided as it will make it difficult for exercise players to fully identify with the scenario.

**5.2.5.3 Incidents**

Each event entails a number of consequences, such consequences are called incidents. An event can lead to several simultaneous incidents. These, in turn, can affect one another. It is therefore helpful to construct a simple impact analysis in order to attempt to predict the actions and reactions of exercise players. This way, the exercise can, at least to some extent, be predicted and the risk of it spinning out of control during the exercise is minimised.

The number of incidents should keep exercise players busy but not overwhelm and thereby paralyse them. Depending on the exercise players’ exercise experience, the exercise can be constructed so as to place more or less pressure on individual exercise players. A certain degree of pressure may be necessary in order to enable for the evaluation of exercise aims and performance objectives.

During the exercise, it is not uncommon for particular incidents or individual injects to become either irrelevant or unsuitable. A list of extra incidents and injects that can be inserted, in such cases, is very useful. The exercise planning team should be prepared to improvise and to produce new material during the course of the exercise. It is always a good idea to end the exercise with a final and unambiguous incident such as, for instance, “the fire has been extinguished and the situation is now under control”.

Each incident that the exercise contains should be possible to use for the evaluation of one or several of the exercise aims. If the correlation between performance objectives and incident is unclear, then the incident should be changed or removed altogether. Measurable evaluation criteria (or points of measurement) need to be developed for the exercise to be possible to evaluate and to estimate to which extent the exercise aims have been achieved.



#### 5.2.5.4 Injects

Injects are the means by which the events and incidents of the exercise are communicated to exercise players. It is through injects that exercise players absorb the events and incidents of the exercise bit by bit. Injects provide exercise players with information, give them problems to solve, limit their behaviour and coerce them to act and make decisions.

A frequently made mistake is to plan for a large amount of incidents without developing any injects. Without injects, exercise players cannot take part in the unfolding of events in the scenario and can thereby not react to them. Injects could, for instance, take the form of a phone call, a pseudo newspaper article or radio clip. One single incident can be communicated to exercise players through one or multiple injects.

It is important that the means by which incidents are injected to exercise players, are realistic and correspond to the ways in which the exercised entity and the world in general works in real life. This is especially the case for operation-based exercises. If injects are unrealistic, the exercise will fail to fulfil its purpose, which is to prepare exercise players for a real situation.

The scenario should stimulate the exercise players in a manner that will ensure that their actions can be evaluated against a backdrop of the evaluation criteria/points of measurement. Injects that are developed within the framework of the scenario should therefore depart from the points of measurement. There has to be a clear relationship and link between injects, exercise aims, and points of measurement. Ensuring the existence of that clear link is the responsibility of the lead evaluator and the main scenario developer.

#### 5.2.6 Documentation

##### 5.2.6.1 General

The organization should document necessary information about the exercises and testing such as: scope, performance objectives, risk assessment, exercise instructions, exercise specifications, evaluations and safety.

The organization should prepare, implement and maintain at least the following documents:

- a) **Exercise annual plan:** This document is developed on the basis of the policy for exercise established by the organization. In the plan exercise aims are translated into exercises to ensure a coherent link. In the plan exercise aims are translated into exercises to ensure a coherent link.
- b) **Exercise long-term plan:** The long-term plan is a first overview about all planned exercises and tests over more than one year. Often, planning for three years is used. The plan gives information about exercise performance objectives, involved units and needed resources as well as time periods in which exercises and tests should be conducted. The long-term plan should be approved by the top management.
- c) **Exercise short-term plan:** The short term plan covers exercises for one year, or other specified planning period and is more detailed than the long-term plan. In the plan exercise aims are translated into exercises to ensure a coherent link. The plans for evaluation of exercises should be part of this plan and reflect the policy of continuous improvement.
- d) **Exercise evaluation:** The quality of each exercise is evaluated so that the correct conclusions from the evaluation of the target group can be drawn and improvements concerning future exercises can be made. Annex D provides information on evaluating exercises and testing.
- e) **Safety plan:** The document in which risk management aspects and procedures are described. Incident simulations should be as realistic as possible. In the safety plan the risks have been identified and the appropriate risk treatments described. The treatments are based on the risk identification and evaluation of the exercise, and may include proactive, preventive, and preparative treatments. Other details, e.g., safety and security organization, exercise stop action procedure, accident reports, etc. may be included.

To ensure the safety of all participants, employees, the general public and environment, the Exercise Safety Officer (ESO) should develop an exercise safety plan. The completed exercise safety plan must be

submitted to the exercise planning committee for review; the exercise director must approve the plan but any modifications should be discussed with the ESO. The exercise safety plan should identify the site-specific hazards of each exercise. The controls that will be used to control each of these specific hazards must be identified in the plan.

### 5.2.7 Records

All documentation should be controlled in accordance with the organization's quality and record retention policies. If the exercise or test involves more than one organization, control of records should be an item for discussion and agreement during initial planning meetings.

### 5.2.8 Intervention plan

The exercise coordinator should consider the challenge of doing a quick termination of the exercises and testing and transition to routine operations when a situation arises that warrants such action (such as a crisis situation). Other reasons for stopping an exercise may include: clarification of a procedure; training to correct observed problems; and, other non-crisis situation. After stopping the exercise may be re-started or terminated.

The urgent need to stop an emergency exercise may arise that causes the requirement to cease all activity immediately. To insure all participants know when it is time to instantly cease all exercise-related activities, an exercise stop-action mechanism should be defined such as a word or phrase. If the use of an "Exercise stop action mechanism" is planned, all participants must be briefed on it and the immediate action to occur when the mechanism is activated. When the emergency clears, the exercise stop-action mechanism will define the signal that will indicate that the exercise activity may resume. If a word is chosen as the mechanism, "No play, No play" or "No duff" may be used.

The organization should adopt one exercise stop-action word and continue to use this word during all exercises and testing. Various terms such as "No play" and "End ex" may be used, but the organization should make sure that all participants know the word and the immediate actions required when the word is heard. The exercise stop word should be covered as part of the pre-exercise safety briefing.

## 6 Conducting

### 6.1 Exercise run-through

The organization should carry out a joint exercise run-through prior to the start of the exercise in order to ensure that all members of the exercise team receive the same initial information. This review should be brief and contain only information that is vital to ensure that the participants can perform as planned during the conduct of the exercise. The lead evaluator should be a participant in this process. It is also critical that a similar review occur with the control team to remain synchronized with injects and exercise scenario changes, and to facilitate the implementation of the exercise director's guidance as the exercise proceeds, at least daily in a multi-day exercise.

### 6.2 Start up briefing

The organization should organise a start-up briefing which is an integral, necessary part of the exercise hazard control. If a hazard is identified and cannot be eliminated, the first technique in hazard control is awareness. If the participants are not aware of the hazard, it is difficult to avoid it or "control the hazard" by maintaining the distance from the hazard, minimizing the exposure to the hazard and maintaining a "shield" from the hazard.

The organization should clearly communicate the reasons for an exercise intervention (both crisis and non-crisis) to all participants.

The start up briefing should be used to avoid confusion between simulated and actual events.

### 6.3 Launch of exercise

The organization should check the communications that will be used to launch, stop (temporary), and terminate exercises and testing prior to the scheduled launch. The methods for communicating launch, stop, and terminate exercises and testing should be explained during the start-up briefing.

### 6.4 Wrap up of exercise

The organization should use the same communications for launching and temporary stop at the end of the exercises and testing.

The start up briefing should be used to insure clear communication with the intent of avoiding confusion between simulated and actual events.

### 6.5 Post exercise briefing

The organization should organise a post exercise briefing in order to gathering information from actual exercises and testing. Critique of actual incidents and near-incidents will provide valuable information on the validity of the plans, the resources that were available, how the resources were used, and the transfer of behaviour learned in training

Every actual incident should be subjected to a critique and a review by the key decision-makers.

The same format for the critique of an exercise or test will be used for an actual incident. During the post-exercise debriefing, special attention should be given to the functioning of the exercise organization and the exercise planning process.

NOTE During the post-exercise debriefing, the organization should give special attention to the functioning of the exercise organization and the exercise planning process.

### 6.6 Observation

The evaluators of the exercise should have knowledge of the expected performance. They should have prepared observation forms, which should contain the exercise performance objective and allow for notes to be taken during the exercise.

NOTE The evaluators should not be assigned to "collateral" duties as a safety officer.

## 7 Improvement

### 7.1 After action review

The organization should conduct an after action review of the exercises and testing as well as of the actual incident in order to retrieve valuable information on:

- the validity of the plans;
- the resources that were available;
- how the resources were used; and
- the transfer of behaviour learned in training.

The same format for the critique of exercises and testing should be used for an actual incident which would allow for comparison of the simulated to actual events.

## 7.2 Evaluation

### 7.2.1 General

The organization should evaluate the exercises and testing based on the performance objectives. The evaluation should be done in two steps:

- observe/measure the performance during exercises and testing; and,
- compare the observations/measurements to the criterion established and described as part of a properly write exercise (testing) performance objective.

The difference between exercise performance objectives and observed/measured performance is the input into the corrective action process.

Annex F provides an example of the check sheets which could be used for evaluation of exercise.

### 7.2.2 Data analysis

The organization should analyze the data generated during the exercise process and identify corrective actions that lead to improvement.

Exercises and testing performance objectives are often developed from accepted standards for competence. The same standards should be used during the analysis of the data for consistency.

## 7.3 After action report

The organization should write an after action report after every exercise that provides:

- an overview of the exercises and testing;
- reports on success against performance objectives;
- what went well;
- what issues were identified; and
- what actions are to be taken and by whom.

The after action report should contain at minimum the scope, performance objective, aims, participants, resources, scenario, script or action plans, activities relating to the preparation and execution of the exercise, the results from the exercise, the feedback from the debriefing, recommendation to close gaps and for improvement and a conclusion.

The after action report should be circulated for input to all participants and once finalized, provide to appropriate management, stakeholders and interested parties. It should also be presented to top management of the participating organizations for their endorsement.

In the after action report the following points may be discussed:

- a) set-up/ staging of the exercise (project management);
- b) exercise aim or object of testing;
- c) identification of constraints on the exercises and testing process;
- d) exercise performance objectives;

- e) selection of type of exercises and testing;
- f) choice of a location;
- g) preparation participants;
- h) set-up and staging;
- i) experiences of the participants with respect to the set-up (first impressions and the evaluation forms);
- j) expert opinion concerning the quality of the exercise from the observers (from discussion with observers);
- k) conclusions regarding the validities of the exercise and the durability of the exercise aims. Possibly recommendations for a next exercise;
- l) evaluation of the exercises and testing performances;
- m) self reflection of the participants, taking into account the adaptation of the exercise aims (previous bullet);
- n) expert opinion of the observers;
- o) conclusions and recommendations;
- p) general (concerning the functioning of the response organization respectively practicing it);
- q) operational performances, competencies and learning experience of participants;
- r) exercises and testing program creating a constructive and supportive atmosphere;
- s) specific evaluation reports of the exercises of any year are processed in an exercise annual report.

It is possible that several versions of the report may be needed in order to preserve confidentiality where the report is shared across organizations. Table 1 provides an example of an after action report.

Table 1 – Example of an after action report

After action report			
<b>Organization:</b> _____ <b>Type of exercise:</b> _____ <b>Date:</b> _____			
<b>Exercise team:</b> Controller: _____ Safety officer: _____ Evaluator # 1 Name _____ Location: _____ Evaluator # 2 Name _____ Location: _____			
<b>Scenario</b>			
<b>Simulations</b>			
Objective number	Exercise objective	Criteria	Observations and corrective action
1			
2			
3			
4			
5			

**7.4 Management review**

Top management should review the after action report by comparing the exercise results with the exercise performance objectives.

**7.5 Corrective action**

The organization should document all recommendations made during the after action review and the result of specific corrective actions.

The organization should identify all corrective actions and appropriate and competent individuals for resolution within agreed timescales.

Limitation on resources to correct discrepancies identified during exercises and testing requires a system for priority.

The organization should monitor and report progress to management, stakeholders and interested parties as appropriate.

The exercise management team should continually search for ways to improve effectiveness and efficiency. Throughout the exercise planning, execution and evaluation process, the exercise management team, as well as all participants, should make notes on “lessons learned.” In other words, the participating organization can

be learning from “mistakes” made during the present exercise. By noting and sharing observations and implementing corrective actions, the goal of continuous improvement is achieved).

## **7.6 Implement follow-up**

Top management should implement the corrective actions identified and follow up to ensure that the commitments made for corrective action are satisfied. A system for tracking the completion of corrective action is recommended.

The organization should, where applicable, incorporate into the standard operating procedures lessons learnt from the exercise. These lessons should also be used in planning and preparing future exercises.

## **Annex A** (informative)

### **Needs and gap analysis**

#### **A.1 Organizational considerations**

In developing the exercises and testing plan, the organization should consider the following questions:

- Does the plan address requirements for exercises and testing?
- Can this plan promote consensus with interested parties?
- Does the plan offer an opportunity to reach and interact with its target group(s) and potentially address their interests?
- Does this plan provide an opportunity to address multiple issues in depth?
- Does this plan focus on the key issues?
- Does the plan provide information tailored to the target group(s)?
- Is this plan practical and relatively easy to implement?
- Does the plan provide for information transfer at relatively low cost?
- Is this plan easy to update?
- Is the effectiveness of this plan measurable?
- Is this plan a good vehicle for education?
- Is this plan creating a constructive and supportive atmosphere?
- Is this plan an effective way to get publicity or increase public awareness?
- Does the plan conform to the organization's constraints?

#### **A.2 Situational analysis**

The development or improvement of an exercises and testing program begins with an acceptance of the need of organization to manage its risks using a number of methods amongst their exercises and testing. In the situational analysis, the organization should consider exercise and testing issues that include:

- existing risk management activities and commitments;
- identification of issues which concern stakeholders;
- exercise and testing activities that have proven to be the most effective in similar situations;



- identification of the opinion leaders and their influence on issues related to management of risk;
- hazard and risk mapping;
- periodic data analysis;
- social and political implications;
- public image of the organization on a specific issue;
- latest developments and trends on risk management issues related to the organization's specific activities,
- products and services;
- economic and financial implications;
- knowledge of the values and cultures of interested parties.

In evaluating the context for an exercises and testing activity, it is also important to consider the potential costs and consequences. These can be of a tangible or intangible nature. The analysis may have already been completed in a community/agencies Hazard, Risk and Vulnerability Analysis (or comparable document)

### **A.3 Identifying information on the organization that is relevant for exercise and planning**

The organization should anticipate issues of concern to interested parties. This will help focus the collection of information on risks and impacts as well performances of its products, services, processes and activities, and protection of assets. Based on the targets set for an exercise and testing activity, appropriate quantitative and qualitative data and information can be selected or generated. Such information should be aligned to current standards and guidelines on performance and performance indicators.

There are many sources and types of information available within most organizations, including

- information on an organization's strategies, policies, and the risks involved:
  - lists of risk and impacts on assets, activities, finances, products and services,
  - asset valuation and assessment of critical shortfalls,
  - lists of risk indicators,
  - routinely and occasionally collected information, such as reports from facilities located in a specific area, reports from subsidiaries (for a holding company), research reports, monitoring, control and measurement data registers and analysis reports,
  - routine regulatory reports,
  - record of compliance with applicable legal requirements and with other requirements to which the organization subscribes,
  - plans, records and guidance on emergency response, and response to accidents,
  - manuals and records of employee training on safety and security,
  - relevant financial and accounting data, and

- information from community outreach activities;
- Choosing the time in which to hold exercises and testing should consider the following:
  - minimum negative effect on the organizations routine,
  - an annual cycle (when holding an exercise at a fixed time, multiyear plans can take this into account),
  - the period in which competencies and skills should be improved.

## **Annex B** (informative)

### **Exercises and testing within a management system description**

#### **B.1 Introduction**

To be effective and efficient, a Management System must harmonize a number of elements within the organization. To do so, the organizations management defines processes and controls which are implemented in the organization so that they become a major factor contributing to the effort of the organization in meeting its policy and achieving its targets and objective. The Management System must also be flexible and scalable so that the Management System will be adaptable to changes in the organizations policy, target and objective and even be a tool to implement the changes.

When implementing a Management System, the organization's stake holders, both internal and external, are not only affected by the Management System but their role performance will have a major impact on the success of its implementation. In regards to many of the stake-holders, there are roles to be performed and responsibilities to be assumed in order for the whole organization to function effectively. In most of the cases, the ability of the stake-holders to apply the relevant and acquired knowledge, skills, and abilities to achieve the required level of awareness and perform their roles and assume their responsibility as defined by the organization will have a major impact on the performance of the organization. In order to achieve a high level of competence, the organization must employ an exercising and testing element as an integral part of its Management System. The actual service will be provided either by a sub-unit within the organization or rendered by an external organization.

#### **B.2 Identifying the benefits of using exercises and testing**

The organization through its Management System must benefit from the exercises and testing. To do so, the organizations needs must be defined clearly so the most suitable activities can be developed. In turn, the organization must receive information to complete the continuous improvement principle.

Figure B.1 provides relation between MSS elements and exercises and testing.

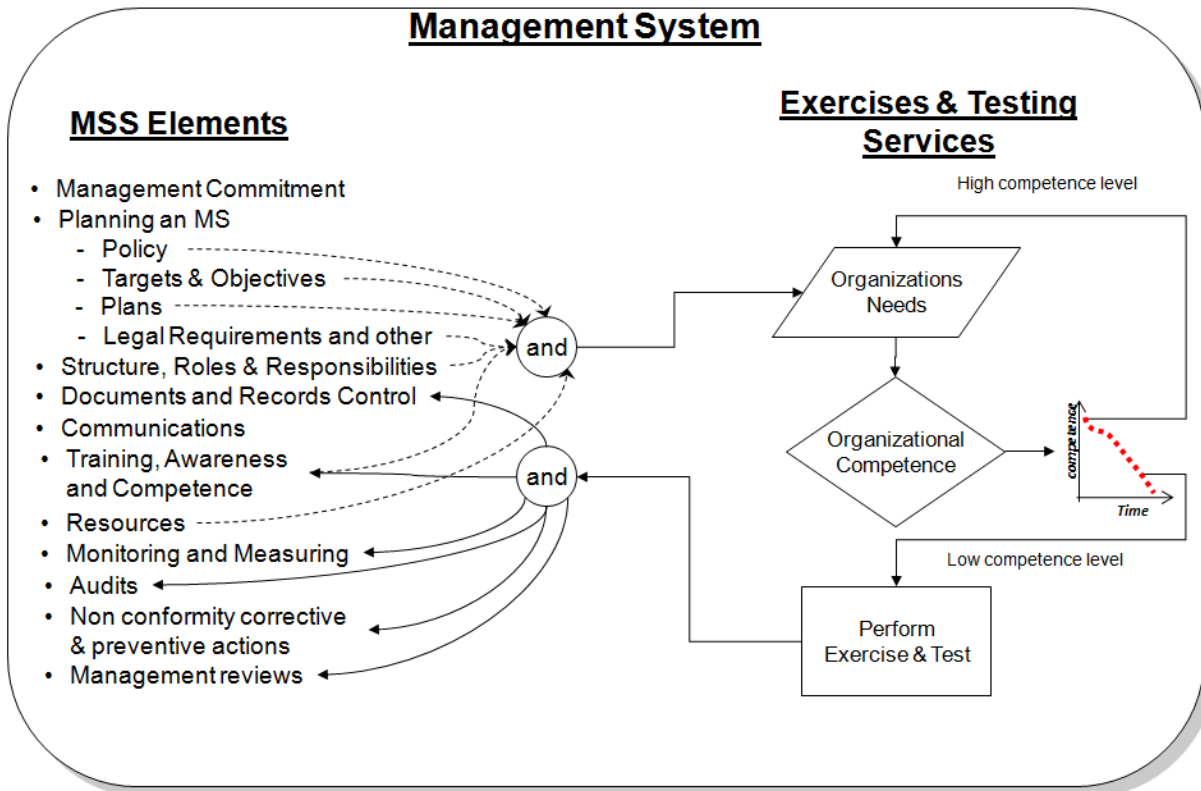


Figure B.1 – Relation between MSS elements and Exercises and Testing

### B.3 Defining the organizations needs

#### B.3.1 Identifying the inputs

In order to develop effective exercises and testing for an organization, the organization needs must be defined and transferred to the exercising and testing service provider. The relation between the different elements of a Management System and the exercises and testing is described in Figure 1. As demonstrated, the inputs to the exercises and testing element are the organization s needs which are derivatives of the following:

##### B.3.1.1 Policy

All activities in the organization should be goaled to support the organizations policy. The policy will also have influence on the exercises and testing of the organization since policy influences all elements of the organization. It is usually a serial process in which the management plans are based on the organizations targets and objective which are based on the organizations policy.

##### B.3.1.2 Aims and performance objectives

The stakeholder's roles and responsibilities are derived from the plans developed by the organization to achieve its aims and performance objectives.

##### B.3.1.3 Plans

The plans and the resources allocated to execution of these plans are the basic element of the organizations needs for exercises and testing. The level of competency of the actors involved in these plans will be defined and achieved through effective exercises and testing and as such a required input.

#### **B.3.1.4 Legal requirement and others**

Legal requirement and others have impact on what has to be done by the actors and on how it can be done. Legal requirement can set limits to what a person can do such as safety limits or social limits and this required limitation must be an integral part of the competencies.

#### **B.3.1.5 Structure, role and responsibilities**

This is the heart of the exercises and testing. The purpose of exercises and testing to ensure the competency and the required knowledge is based on the roles and responsibility of the actor. This information is most important for developing the exercises and testing.

#### **B.3.1.6 Resources**

The organization's management will allocate resource such as, finance (money), manpower (people and man hours), equipment etc. These resources are allocated so the actors can perform their roles. These resources are also allocated to building and preserving competencies. The exercises and testing must develop and execute within the resource constraints.

### **B.3.2 Elements influenced by feedback from the exercises and testing**

#### **B.3.2.1 Documents and records control**

It is essential to record the "competence enhancing" activities performed by the actors in the organization. This information is to be used by the organization to evaluate the personnel in the context of the aims and performance objectives and to serve as a base for developing future plans.

#### **B.3.2.2 Training awareness and competence**

The information from the exercises and testing is a direct indication to the level of training awareness and competence and a direct input for evaluating gaps that have to be addressed.

#### **B.3.2.3 Monitoring and measuring**

This is the element that indicates the effectiveness of the exercises and testing as part of the "Check" in the PSCA" model.

#### **B.3.2.4 Non conformity**

This element contributes to the continual improvement of the management system and input from exercises and testing is required as part of the management system.

#### **B.3.2.5 Management review**

This element is crucial for getting management involvement in the exercises and testing. Input may have impact on policy revision.

## Annex C (informative)

### Exercise method

	Seminar	Workshop	Table top	Simulation	Drill/Functional	Full scale
<b>Scope (alternate names)</b>	Introductory, Overview or Education Sessions	Introductory, Overview or Education Sessions	Practical or simulated	Games and Gaming	Walk-through or Specialized Exercise	Live or real-life exercise
<b>Aim</b>	Provide overview of Plan. Designed to orient participants to new or updated plans, policies or procedures	Intended to build specific product. Example draft plan	Evaluate plans, procedures, coordination and assignment of resources	Provide practice in decisions required during a disruptive incident	Simulate a scenario as realistically as possible in a controlled environment. Testing communication, preparedness and availability of resources	Deploys personnel, equipment and resources to a specific location for the real time, real life simulation of a scenario. Incorporate as many BCP
<b>Benefits</b>	Informal, easy to conduct and low stress	Informal, easy to conduct and low stress .More participant's involvement	Practices team building and problem solving. Medium stress level	Decisions and actions generate simulated responses and consequences. Involves more participants, simulators and evaluators	Decisions and actions occur in real time. Generate responses and consequences	Evaluates operational capabilities in an interactive manner, facilities communication and coordination across organization and public-private sector
<b>Performance objectives</b>	Specific objectives	Specific objectives that identify the "product (s)" of the workshop	At least 3 Performance objectives	At least 5 Performance objectives	Number of exercise performance objectives depending upon the number o functions involved. No less than 3 objectives per function	Number of exercise performance objectives depending upon the number o functions involved. No less than 3 objectives per function. FSE with over
<b>Safety a)</b>	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk	High Risk
<p>NOTE Any of the exercises methods can be used with the various exercise types: Alerts Exercise, Start Exercise, Staff Exercise, Decision Exercise, Management Exercise, Cooperation Exercise, Crisis Management Exercise, and Strategic Crisis Management Exercise</p>						
<p>a) Definition of "Low", "Medium", "High" is up to organization to decide</p>						

## **Annex D** **(informative)**

### **Strategic exercises**

#### **D.1 Term**

“Strategic crisis management exercise” (in short: strategic exercise) refers to comprehensive exercise activities at strategic level (e. g. inter-ministerial crisis staff, political-administrative staff, cross-sector and cross-departmental management staff, crisis management organization of corporate management), which aims at

- improving the integrated crisis reaction ability in exceptional threat and danger situations (crisis situations); and
- developing a comprehensive coordination and decision culture in organizations of the public as well as the private sector.

#### **D.2 Scope**

The aim of strategic exercises is to practice top management inter organizational co-operation which may involve exercises across and between any mix of levels of public, private and NGOs in the event of extreme national large-scale damage and threat situations, in order to guarantee an even more effective protection of the population.

The major challenge is the interdisciplinary connection of all areas of civil security provisions to create an efficient security system for the population and its basic needs.

Scenarios of extreme national danger and large-scale damage situations, which ask for a cross-social coordinated decision finding process, are an important component of target achievement.

Strategic exercises therefore include the following aspects:

- exercises executed by the crisis and administration staff ranked higher than the tactical-operative level;
- to bring together Federal responsibilities and central possibilities and potentials;
- creation of networks, among other things by bringing together public and non public sectors (critical infrastructures);
- cross-departmental and cross-divisional coordination of media and PR work;
- creation of optimal basic conditions for successful operative-tactical deployment;
- ensuring sustainability and ability to persevere;
- cross-social approach.

### D.3 Exercise targets

Strategic exercises basically goal at the examination and evolution of cross-social precautionary systems for the protection of the population. The exercises include the efficient coordination of necessary measures and the cooperation of responsible authorities and private operators of critical infrastructures in the context of extreme risk and damage situations. Focus of strategic exercises should be on cross-departmental and interdisciplinary crisis management, including information, media and resource management.

In particular strategic exercises goal at

- effective coordination of the necessary measures for the handling of large-scale damage and crisis situations;
- integration of enterprises from the economy and other organizations;
- identification of weak points:
  - within organizational structures in the event of crisis situations,
  - in the context of management and deployment concepts,
  - in the context of the cooperation of different organizations and of the deployed helpers;
- assessment and improvement of :
  - the instruments for the cross-social situation evaluation and prognosis,
  - cross-departmental cooperation and the cooperation across public authorities and institutions,
  - efficiency of existing organization, management and communication structures which should even work in the event of a deficiency in personnel or technical equipment,
  - availability and quick deployment of personnel and material (special) resources according to current precaution and mission plans,
  - capability of the allocation of necessary professional expertise to cope with the situation,
  - management procedures within the practicing staff and of internal crisis communication between the staff at management level,
  - timely fine-tuned press and PR work (One-Voice-Policy),
  - inclusion of psychosocial aspects of crisis management,
  - appropriate deployment of management and deployment resources, in particular against the background of scarce resources and IT-supported communication.

### D.4 Participants

Participants in the scenarios are exercise staff (crisis management staff/administrative staff) from authorities and private operators. The organization is carried out by exercise management staff, central and local operating staff as well as so-called framework management groups.

For the planning, preparation, execution and evaluation of the exercise, central and local project groups are deployed which – depending on the scenario – are supported by experts. A high-ranking steering committee makes decisions regarding the main exercise targets and the concrete exercise concept (exercise framework).



## D.5 Methodology

In the course of the exercise, preparatory measures as well as general and thematically appropriate workshops are organised. In general, strategic exercises are based on an incremental and discursive approach.

For strategic crisis management exercises, a minimum of 12 months preparation time seems to be necessary. In the course of the preparation phase, the starting point (scenario), a script with the appropriate additional documents, the communication plan and further exercise papers are prepared. Additionally, the exercise participants are introduced to their functions. Right from the start of the actual exercise, it is important to remove, whenever possible, any identified deficits of crisis management in order to start the execution phase with optimized structures. Therefore, it is of utmost importance to remedy, as much as possible, the defects of crisis management, which had been identified during the preparation phase, in order to enter the execution phase against the background of optimized structures.

The aim is to deploy personnel, equipment, and resources to a specific location for the real time, real-life simulation of a scenario. It incorporates as many functions as possible to test the entire plan. The number of exercises performance objectives depending upon the number of functions involved. There should be no less than three objectives per function.

## D.6 Organizational aspects

During the execution of the exercise, a central exercise control group and local management staff as well as framework management groups initiate, monitor, coordinate and, if necessary, adjust the development of the exercise. The framework management groups report to the management staff. They are closely involved in the general preparation and execution of the exercise. Framework management groups have management knowledge. At the same time they are also participants in the exercise. Because of their double function, they represent the exercise environment. Toward the exercising staff, the framework management groups behave like exercising staff and pass on management knowledge only depending on situation and time.

For the control of the exercise, a special communication network is regularly established. The exercise staff themselves normally practice during their regular operational and organizational structure by profiting from their real communication structures.

## D.7 Focal points

In the context of strategic exercises media and PR work (risk and crisis communication) is particularly important because it is a strategic instrument of crisis coping measures. Therefore, the layout of the exercise takes the exertion of “media pressure” on the decision makers into consideration. Pressure on the media is actively generated by experienced members of the exercise management who simulate scenarios reflecting the situation. Irrespective of media scenario simulation in the exercise, it is necessary to include real media work. The responsibility for real media and PR work remains with full-time staff.

Psychosocial aspects of crisis management are increasingly important as well. For exercises at strategic level, possible reactions of the population, individual groups or helpers are therefore important parameters which have to be taken into account when the exercise is being prepared, executed and evaluated.

## D.8 Evaluation

After the completion of the exercise, based on the findings, a joint evaluation report is prepared which is distributed to all those who participated in the exercise. It is also a starting point for the further optimization of crisis management structures and the development and further development of up to date strategies for the handling of crises. To be able to understand and evaluate these optimization measures during the evaluation phase, a complete documentation should be paid attention to.

## **Annex E** (informative)

### **Disaster ethnography**

#### **E.1 Introduction**

Throughout human history, there have been a number of large-scale disasters around the world such as huge earthquakes. However, large-scale disasters do not occur so frequently. The impact of such large-scale disasters is extraordinary and is beyond most people's imagination.

Because of their low rate of occurrence and complex impacts, most people have great difficulty in estimating what would possibly happen in large-scale disasters. This may lead to insufficient inappropriate planning and preparation for such disasters. The scale and complexity of disasters means that few people are ready for many of the unexpected situations once a disaster occurs. Thus, it is crucial everyone involved in disaster management, especially those people who have roles in emergency response and management, to get to know more about the reality of large-scale disasters. This would enable people to understand social context and better preparation for disasters.

A method called Disaster Ethnography enables people in disaster management to learn from people's direct experience of a disaster. This is essential to develop a comprehensive picture and to better prepare for the effects of a disaster. Disaster Ethnography provides insight to the effects of disaster on ordinary people and is a very useful approach in developing and running exercise programmes. An Example workshop programme using Disaster Ethnography is introduced in this annex.

#### **E.2 Purpose**

The main purposes of using Disaster Ethnography in exercises are

- to learn experiences and tacit knowledge of people who were directly affected by the disaster
- to be able to understand potential problems and events that may happen at disasters; and
- to generate deeper understanding necessary for more effective preparations for large-scale disasters.

#### **E.3 Methodology**

Disaster Ethnography is a method that records the verbal report of people who have experienced a disaster or worked for emergency response in a disaster, and systematically analyses it to provide the information about recurring patterns and assist in helping to build a more comprehensive understanding what would occur in future disasters, thereby revealing common themes in disasters.

Disaster Ethnography starts with recording the personal experiences through an unstructured interview. To accumulate different aspects of experiences people have had in a disaster, interviewing people in an appropriate way is critical. When choosing interviewees, the following six steps should be taken:

- a) To choose a geographic area as a research target.
- b) To understand regional characteristics of the area.
- c) To understand the damage in the area.

- d) To narrow down the research target. (i.e. Focus on a smaller geographic area or a group of people within the primary selected area).
- e) To study more in details about the damage the area or the group of people who suffered from disasters
- f) To choose interviewees within the area or from the group, interviewees should have faced a range of different situations in a disaster.

In an interview, an interviewer should:

- Be careful about an interviewee's psychological status. An interviewee may have a great deal of post-traumatic stress as a result of a disaster, and it is crucial to fully care about him/her so as not to hurt him/her psychologically through an interviewing process.
- Carefully listen to an interviewee's remarks and fully accept his/her story so that an interviewee can talk about their experience freely without any disturbances.
- Make questions, if any, after an interviewee finishes what he/she wants to share to elaborate the points he/she made for clarity, coherence and capturing all aspects of the experience.
- Record the interview by taking notes and using devices including voice and video recorders.

After holding an interview, an interviewer should:

- Write a verbatim transcript based on the notes, voice records, etc.
- Edit the transcript, if necessary, without changing its original meaning, to make it more easily readable and understandable.
- Confirm with the interviewee the edited transcript if it correctly describes his/her experience to finalize the record.
- Give an example of the record gained through an interview.

The record should be analyzed to extract tacit knowledge from which lessons may be drawn, Methods to analyze records may not necessarily be highly quantitative and technical. There are good methodologies for analysis of this type of material. For example, reading records several times and looking for points and patterns in their experience is a good starting point of the analysis. It is also good to discuss their findings with other people in a workshop in an ethical way. E.5 gives an example one-hour workshop programme utilizing Disaster ethnography.

#### E.4 Disaster ethnography record example

**Box E.1** gives an example of the record. Note the example is the excerpt from the record of an interview with a local government officer in charge of relief supplies. This interview was conducted after Kobe earthquake occurred in 1995 in Japan.

##### Box E.1 — Example of the record

When I went to the city hall, phone calls for offers to send us relief goods went on ringing 24 hours a day... The people who had made such offers called us again complaining that we did not come to their places to pick them up... the mechanism for those things were considerably confused at first."

- A local government officer in charge of relief supplies

Disaster Ethnography can provide deep insight to the diverse experiences of people in disasters. For example, various themes of Disaster Ethnography records on earthquake are available for use in Japan, including fire brigades (fire-fighters' dilemma: fire fighting vs. rescue), relief supplies (allocation and logistics of relief goods), temporary mortuary (lack of facilities, coffins, and dry ices), evacuation centres (a large number of evacuees, insufficient water, foods, electricity, and fights over insufficient supplies), and house damage assessment.

## E.5 Disaster ethnography workshop

One way to use disaster ethnography as a part of exercise programmes is workshop based on Disaster Ethnography. Disaster ethnography workshop basically consists of the following parts:

- Orientation
- Lecture on Disaster ethnography
- Record reading
- Discussion
- Presentation
- Evaluation

Other work items (such as making a self-checklist based on discussion) may be added if necessary.

The disaster ethnography workshops provide participants and researchers with experiences not easily obtained in the usual debriefs following a disaster. The workshop outcomes assist those working in disaster management to get a very rich understanding of the post disaster circumstances and ability to think very broadly to make the necessary preparations for large scale disasters. It is particularly effective if participants are selected from ordinary emergency responders.

In a disaster ethnography workshop, participants should be grouped into up to 12 teams (4-5 teams are desirable) and each team should have approximately 5 people with a facilitator. The required time for one whole workshop may vary (e.g. from 1 hour to 1 day) depending on the purpose of a workshop and time constraints.

An example one-hour disaster ethnography workshop programme is given in Table E.1.

Table E.1- Example: 1-hour Disaster ethnography workshop programme

Work No.	Duration (Mins.)	Work Title	Objective	Work Unit	Work Content
1	5	Orientation	Know the overall flow and the goals of the training.	O	Lecturer introduces him/herself and explains the overview of the programme.
2	5	Lecture on Disaster Ethnography	Understand what disaster ethnography is.	O	Lecturer explains Disaster Ethnography.
3	20	Record Reading	Form an image of local government response at times of major disaster	I	Group trainees into 2-3 groups (5-10 people per group)  Each member reads the record and highlights (with a highlighter) the items learned for the first time, items that turn out as expected, and wisdom that should be shared.
4	15	Discussion	Share know-how of effective disaster response activities in each group.	G	Each member presents his/her highlighted items to his/her team members.  Based on discussion, each team categorizes the highlighted points.  Example of categories:  <u>Example 1:</u> inside a organization, between organizations, for residents  <u>Example 2:</u> (Within) 1 hour, 3 hours, 1 day, 1 week (after an incident)
5	10	Presentation	Understand and share know-how of effective response at times of major disaster.	O	Present each group's findings to other groups.
6	5	Evaluation	Understand that tacit knowledge that is not written in plans or manuals is important to respond to disasters effectively.	O	The lecturer makes comments on their findings and wraps up the programme.
NOTE 1 In Work Unit column, I, G and O denote Individual, Group and Overall respectively.					
NOTE 2 This workshop is designed as a short-term introductory program.					

## Annex F (informative)

### Example of evaluation check sheet for exercises

Evaluators of exercise should check the level of attainment to assure that various aspects of functions work properly and effectively as a part of post-exercise debriefing.

Tables F.1-5 shows an example of evaluation check sheets for functional exercise, and Figure. F.1 shows an example of a radar chart with an evaluation result.

NOTE Attainment level, evaluated numerically up to 3 points for each evaluation item, and is defined as follows:

- 0 pt (no criterion is met): No attainment.
- 1 pt: Only basics are covered. The function may not be effective enough.
- 2 pts: The function is partially effective.
- 3 pts: The function is fully effective.

The sum of points indicates total level of attainment of each function, and can be shown in a radar chart format as shown in Figure F.1.

**Table F.1- check sheet for exercises (Command function)**

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
			1 pt	2 pts	3 pts	
(1)	Guidelines	<b>Existence or non-existence:</b> Guidelines for task force activities and field site activities exist.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The contents of the guidelines are pertinent. <b>Clarity:</b> The guidelines are clear and easy to understand.				
		<b>Penetration:</b> The guidelines are well understood by personnel at task force and field sites. <b>Operability:</b> Task force and field sites activities actually follow guidelines.				
(2)	Command	<b>Existence or non-existence:</b> The chief of task force give commands. <b>Mechanism Establishment:</b> The command mechanism is established.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The contents of commands are pertinent for the circumstances. <b>Clarity:</b> The commands are clear and easy to understand.				

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
		<b>Timeliness:</b> The commands are given on a timely basis.				
		<b>Penetration:</b> The given commands are well known by personnel at task force and field sites. <b>Operability:</b> Task force and field sites activities actually follow given commands.				
(3)	Chains of commands	<b>Existence or non-existence:</b> Chains of commands and those facilitators at task force and field sites exist.	1 pt			
		<b>Pertinence:</b> The chains of commands are pertinent for the circumstances. <b>Clarity:</b> The chains of commands are clear and easy to understand.		2 pts		
		<b>Penetration:</b> The chains of commands are well understood by personnel at task force and field sites. <b>Operability:</b> Task force and field sites activities are actually conducted based on chains of commands.			3 pts	
(4)	Response to changing situations	<b>Existence or non-existence:</b> Responses are made to changing situations (getting worse, terminated and so on) at task force and field sites.	1 pt			
		<b>Pertinence:</b> The contents of responses are pertinent for the circumstances. <b>Clarity:</b> The responses are clear and easy to understand. <b>Timeliness:</b> The responses are made timely.		2 pts		
		<b>Penetration:</b> The given responses are well known by personnel at task force and field sites. <b>Operability:</b> Task force and field sites activities are actually based on the responses.			3 pts	
			<b>TOTAL</b> (out of 12pts)			

Table F.2- check sheet for exercises (control function)

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
			1 pt	2 pts	3 pts	
(5)	Situation understanding	<b>Existence or non-existence:</b> The task force understands the situation about traffic, evacuation and so on. <b>Mechanism Establishment:</b> The mechanism of situation-understanding is established.	1 pt	2 pts	3 pts	
		<b>Accuracy:</b> The situation-understanding is accurate. <b>Coverage:</b> The situation-understanding covers necessary matters.				
		<b>Promptness:</b> The task force understands the situation promptly.				
(6)	Initial Reporting	<b>Existence or non-existence:</b> The initial report is sent out. <b>Mechanism Establishment:</b> The mechanism of initial report-outgoing is established.	1 pt	2 pts	3 pts	
		<b>Accuracy:</b> The initial report is accurate for the situation. <b>Promptness:</b> The initial report is sent out promptly.				
		<b>Penetration:</b> The initial report is understood well by personnel at task force and field sites. <b>Operability:</b> The activities at task force and field sites are actually based on the initial report.				
(7)	Chains of control	<b>Existence or non-existence:</b> Chains of control at task force and field sites exist.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The chains of control are pertinent for the circumstances. <b>Clarity:</b> The chains of control are clear and easy to understand.				
		<b>Penetration:</b> The chains of control are well understood by personnel at task force and field sites. <b>Operability:</b> Task force and field sites activities are actually conducted based on the chains of control.				
(8)	Information -sharing	<b>Existence or non-existence:</b> The information about the situation is shared at task force and field sites. <b>Mechanism Establishment:</b> The mechanism of information-sharing is established.	1 pt	2 pts	3 pts	



No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
		<b>Accuracy:</b> The shared information is accurate. <b>Coverage:</b> The shared information covers necessary matters.				
		<b>Promptness:</b> The information is shared promptly. <b>Penetration:</b> The information is shared well by personnel at task force and field sites.				
			<b>TOTAL</b> (out of 12pts)			

### F.3- check sheet for exercises (Communication function)

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
(9)	Communication with related organizations	<b>Existence or non-existence:</b> There are communications with related organizations. <b>Mechanism Establishment:</b> The mechanism of communication is established.	1 pt			
		<b>Pertinence:</b> The contents of the communications are pertinent for the situation. <b>Clarity:</b> The contents of the communications are clear.		2 pts	3 pts	
		<b>Timeliness:</b> The communications are made timely.				
(10)	Response to inquiries	<b>Existence or non-existence:</b> There are responses to the inquiries from related organizations. <b>Mechanism Establishment:</b> The mechanism of responses to inquiries is established.	1 pt			
		<b>Pertinence:</b> The contents of the responses are pertinent for the situation.		2 pts	3 pts	
		<b>Timeliness:</b> The responses are made timely.				
(11)	Operation of communication devices	<b>Existence or non-existence:</b> The communication devices (Cellular phones, TV conference systems, and so on) are operated at task force and field sites. <b>Mechanism Establishment:</b> The mechanism of the operation of communication devices is established.	1 pt	2 pts	3 pts	

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
		<p><b>Pertinence:</b> The usage of the devices is pertinent.</p> <p><b>Clarity:</b> The usage of the devices is shown clearly and easy to understand.</p>				
		<p><b>Penetration:</b> The usage of the devices is well understood by personnel at task force and field sites.</p> <p><b>Operability:</b> The operation at task force and field sites follows the proper usage.</p>				
(12)	Communication with dispatched personnel	<p><b>Existence or non-existence:</b> Communications with dispatched personnel exist.</p> <p><b>Mechanism Establishment:</b> The mechanism of communication is established.</p>	1 pt			
		<p><b>Pertinence:</b> The contents of the communications are pertinent for the situation.</p> <p><b>Clarity:</b> The contents of the communications are clear.</p>		2 pts	3 pts	
		<p><b>Timeliness:</b> The communications are made timely.</p>				
			<b>TOTAL</b> (out of 12pts)			

## F.4 – check sheet for exercises (Information handling function)

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
			1 pt	2 pts	3 pts	
(13)	Information -unification	<b>Existence or non-existence:</b> The information about the situation is unified at task force and field sites. <b>Mechanism Establishment:</b> The mechanism of information-unification is established.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The unified information is pertinent for the situation. <b>Accuracy:</b> The unified information is accurate.				
		<b>Promptness:</b> The information is unified promptly. <b>Order:</b> The information is unified in order of priority. <b>Operability:</b> The activities at task force and field sites are actually based on the information.				
(14)	Operation of IT devices	<b>Existence or non-existence:</b> The IT devices (PC, software, networks, and so on) are operated at task force and field sites. <b>Mechanism Establishment:</b> The mechanism of the operation of IT devices is established.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The usage of the devices is pertinent. <b>Clarity:</b> The usage of the devices is shown clearly and easy to understand.				
		<b>Penetration:</b> The usage of the devices is well understood by personnel at task force and field sites. <b>Operability:</b> The operation at task force and field sites follows the proper usage.				
(15)	Check of outgoing information	<b>Existence or non-existence:</b> The outgoing information is checked at task force and field sites. <b>Mechanism Establishment:</b> The mechanism of the check of outgoing information is established.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The check of outgoing information is pertinent. <b>Accuracy:</b> The check of outgoing information is accurate.				
		<b>Promptness:</b> The information is checked promptly. <b>Order:</b> The information is checked in order of priority.				

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
			1 pt	2 pts	3 pts	
(16)	Measures for equipment failure	<b>Existence or non-existence:</b> The measures or alternate means for equipment failure are made at task force and field sites.	1 pt			
		<b>Pertinence:</b> The contents of the measures for equipment failures are pertinent. <b>Clarity:</b> The measures for equipment failures are shown clearly and easy to understand.		2 pts		
		<b>Penetration:</b> The initial reactions are well understood by personnel at task force and field sites. <b>Operability:</b> The activities at task force and field sites are actually based on the measures.			3 pts	
			<b>TOTAL</b> (out of 12pts)			

Table F.5 - check sheet for exercises (Action management function)

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
			1 pt	2 pts	3 pts	
(17)	Initial responses	<b>Existence or non-existence:</b> Initial responses are made at task force and field sites.	1 pt			
		<b>Pertinence:</b> The initial responses are pertinent. <b>Clarity:</b> The initial responses are clear and easy to understand.		2 pts		
		<b>Penetration:</b> The initial responses are well known by personnel at task force and field sites. <b>Operability:</b> The activities at task force and field sites are actually based on the initial responses.			3 pts	
(18)	Prevention of waiting instruction	<b>Existence or non-existence:</b> The measures for preventing 'waiting instruction' are made at task force and field sites.	1 pt		3 pts	
		<b>Pertinence:</b> The contents of the measures for preventing 'waiting instruction' are pertinent. <b>Clarity:</b> The measures for preventing 'waiting instruction' are shown clearly and easy to understand.		2 pts		

No.	Evaluation Item	Evaluation Criterion	Attainment Level			Evaluation
		<b>Penetration:</b> The measures for preventing instruction-waiting are well understood by personnel at task force and field sites. <b>Operability:</b> The activities at task force and field sites are actually based on the measures.				
(19)	Responses to press	<b>Existence or non-existence:</b> Responses are made to press at task force and field sites.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The responses to press are pertinent for explanation to outside. <b>Clarity:</b> The responses to press are clear and easy to understand.				
		<b>Promptness:</b> The responses to press are conducted promptly.				
(20)	Cooperation	<b>Existence or non-existence:</b> Cooperation is made at task force and field sites.	1 pt	2 pts	3 pts	
		<b>Pertinence:</b> The cooperation is pertinent for situation.				
		<b>Operability:</b> The properly cooperated activities are conducted at task force and field sites.				
			<b>TOTAL</b> (out of 12pts)			

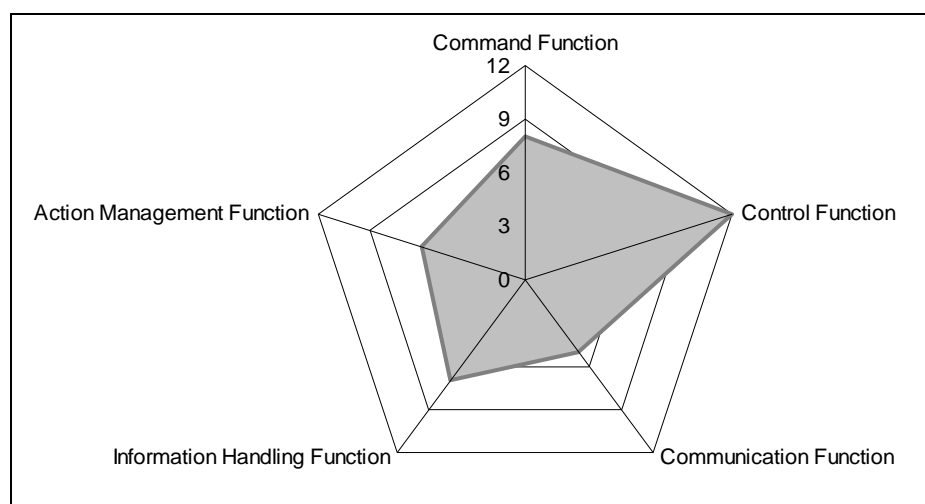


Figure F.1 – Example of radar chart

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