Search & Rescue

Emerging technologies for the Early location of Entrapped victims under Collapsed Structures & Advanced Wearables for risk assessment and First Responders Safety in SAR operations

D8.1 S&R Pilot guidelines and User's Handbook

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Executive Summary

The purpose of this handbook is to provide guidelines and a reference for the design, planning, conduct and evaluation of exercises. Exercising is integral to:

- the development of capability of personnel
- to the preparation of personnel to carry out their functions during actual events

This handbook is designed to:

- offer a series of checklists and prompts for exercise managers.
- illustrate different aspects of the exercise management process.
- provide a shared understanding of key concepts, principles, and frameworks.
- provide consistency in the terminology, management structures and documentation used in exercise management.
- provide resources that improve the quality of exercises.

The use of "Pilot guidelines and User's Handbook" is mandatory as a guideline for the seven S&R Pilots that will be testing and evaluating the S&R technologies.

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1 Introduction

The following handbook provides S&R end users a reference and guidance in developing the various use cases in which S&R technologies will be tested and evaluated. These pilot guidelines and user's handbook help generate a common understanding on exercises and its purpose and subsequently lay out the key components and steps to be followed in the process of developing exercises for first responder organisations. The handbook explains in more detail the different phases of an exercise from planning to conduct and evaluation. It further addresses the different types of exercises and their applicability depending on specific needs and context of organizations. Besides the key steps of planning and execution of an exercise, various roles and responsibilities are identified. The handbook provides a detailed picture of key components, tasks and activities as well as key roles and responsibilities to be assigned for a successful and smooth exercise run. The handbook concludes with a general outlook on the evaluation of exercises. [1]–[5]

1.1 What is an exercise?

An exercise is a controlled, objective-driven activity used for testing, practicing or evaluating processes or capabilities. It can be as simple as a planning group discussing an emergency plan or as complex as a major multi-agency event involving several organizations and participants. It enables the team running the project to test logistics, communications, stakeholder management plans, operational procedures and the effectiveness of any rollout tools. It can also enable deficiencies in project team briefing, training and skills to be ironed out before a real event occurs.

There is a clear need for a control structure that enables prompt cancellation but also allows for potential changes in approach, scope and direction if required. The exercise enables a more accurate budget plan to be produced and offers an opportunity for the benefits of an action to be revisited in the light of practical experience.

1.2 Why conduct exercises?

In Crisis Management theory, exercises are of interest for people dealing with research and innovation who would like to test some new solutions, for practitioners in the field who have identified a problem in daily operations and are motivated to initiate the process of assessing solutions, for experts working in coordination centers who consider participating in exercise-like activities. Furthermore, in exercises solution providers can collect user feedback to improve their solutions. Practitioners use exercises to teach their team members new knowledge, to consolidate and to apply existing knowledge. The main aim of exercises is to successfully cope with real events.

Regardless of size, exercises are useful to:

- evaluate plans
- explore issues
- promote awareness
- develop or assess competence

- demonstrate capability
- practice interoperability
- validate training
- identify gaps
- evaluate equipment, techniques and processes.

1.3 Value of exercises

Exercises are an essential component of preparedness and should be used to enhance capability and contribute to continuous improvement. In an exercise, innovative solutions or training of routines are used by the participants and assessed in the context of a simulated crisis. The main value of S&R exercises is the use of new technologies in exercises in order to evaluate their added value in a crisis. Exercises ensure staff is fully prepared and capable of responding to incidents by efficiently following life continuity and disaster recovery procedures. Exercises can reveal weaknesses in those procedures, such as unexpected implications of a given type of incident, enabling managers to revise and improve the procedures.

1.4 Concept of development phase

All exercises begin with the identification and analysis of the exercise needed to determine the aim and objectives. When you start a new exercise two pieces of information are key: What is your goal and what are the circumstances you work in. The goal gives you the rationale for the exercise project and the circumstances are the boundaries/context you can act within. This could be to test, evaluate, assess, practice or demonstrate aspects of policy, plans, procedures, systems or training. Given the aim and objectives, the scope, style and participants are determined. In this segment, the organizer must identify a need for an exercise. This need will include identification of procedures or measures that require practice or improvement and should be exercised. Based on this need, organizers can then select what type of exercise to conduct, and what organizations should participate. The concept development phase concludes with the production and approval of an exercise concept document.

1.5 Planning phase

In this segment, the organizer will drive the planning process. This process will involve recruiting the participants; acquiring financial resources for the exercise; selecting (and booking) the location, developing the scenario, rules, tools, and training materials for the exercise; selecting monitors and other role-players, and specifying what and how they will perform their duties; and planning the evaluation process. Exercises need to be carefully planned and managed. Even the smallest of exercises requires a coordinated approach to its design, conduct and evaluation. Establishing a planning team and identifying the functions that need to be managed are essential to ensure the success of any exercise.

1.6 Conduct phase

The exercise conduct phase includes starting, managing and finishing the exercise. The principles outlined during the conduct phase may be applied across discussion, functional and field exercises.

Regardless of the size of the exercise being conducted, exercise managers should be aware of a range of exercise management issues to be managed, including but not limited to:

- pre-exercise activities
- roles of exercise staff during the conduct of the exercise
- occupational health and safety (OHS) issues
- briefings
- debriefings

The conduct of the exercise involves detailed coordination by the exercise control (EXCON) staff, which initiates and controls the various stages of the exercise as it unfolds to meet the objectives.

1.7 Evaluation phase

Exercise evaluation should include at first the evaluation of the developed S&R technologies and its applicability/feasibility, an analysis of the management of the exercise, as well as the participants' responses to the developing scenario. This process tends to include a final evaluation report, or multiple reports tailored for different audiences. These reports review the exercise, identifying weaknesses, and recommending improvements. Furthermore, this process may include an ongoing process or forum by which to continue to address the weaknesses and recommendations identified. Evaluation outcomes should contribute to an organization's learning and improvement.

1.8 Exercise management

Size and complexity will determine the number of people required to plan and conduct the exercise. An exercise manager, or management team, should always be appointed – preferably with an understanding of project management, stakeholder engagement and risk management. One person can manage a small exercise, whereas larger exercises will require a team of appropriately skilled personnel and a governance structure. Exercise management teams should include subject-matter experts that may be sourced from the organizations involved and the local community.

Exercise managers (or management teams) will perform a number of tasks, including:

- developing the aim and objectives
- determining the scope of the exercise
- conducting planning and progress meetings
- preparing documentation
- appointing EXCON staff
- overseeing the conduct of the exercise

- facilitating or overseeing debriefs
- ensuring the exercise is evaluated
- compiling an exercise report
- validating exercise objectives

Exercises need to be tailored to suit the identified aim and objectives. Monitors observe and note these actions, and inject information into the scenario. It may be that a program of exercises and related activities is required to achieve the aim and objectives, rather than one large-scale exercise that tries to do everything. A typical example of exercise management is the USAR component management of the **EU Civil Protection Mechanism.**

USAR Component	Tasks	Staff Allocation	Number Total 39
Management	Command	Team Leader	1
	Coordination/ Planning	Deputy Team Leader/ Planning Officer	1
	Liaison/Media/Reporting	Liaison Officer	1
	Assessment/Analysis	Structural Engineer	1
	Safety & Security	Safety Officer	1
	RDC/OSOCC/UCC	Coordination Officer	2
	Administrative	Information Manager	2
Search	Technical Search	Technical Search Specialist	2
	Dog Search	Dog Handler	2
	Hazardous Materials Asessment	Hazardous Materials Specialist	1
Rescue	Breaking and Breaching; cutting; shoring; technical rope	Rescue Team Manager and Rescue Technicians	14 (2 teams comprising 1 PL and 6 rescuers)
	Lifting and Moving	Heavy Rigging Specialist	4
Medical	Medical Team Management: Coordination and administration of medical team. Integration with local health infrastructure Care of team (including canines) and victims encountered	Medical Doctor	1
		Physician, Paramedic, Nurse	2
Logistics	BoO	Logistics Team Manager	1
	Water and food supply / Transport capacity and fuel supply	Logistician	1
	Communications	Communications Specialist	1

Table 1-1: USAR Component

2 Exercise

2.1 Overview (of concept phase)

The concept development phase is crucial to the exercise management process. It will identify and analyse the need for the exercise, as well as ensure the appropriate level of authority so the conduct of the exercise is secured. Obtaining the appropriate level of authority helps to gain the commitment of all organizations to provide resources during the planning process and the exercise itself. [1]–[6]

2.2 Identify the need

Every need is embedded in a certain context. It is entwined with a bundle of roles, responsibilities, situations, equipment etc. In order to find a solution that bridges the gaps, first of all there is the need to identify the exact time/situation it occurs.

Identifying the need for an exercise is simply a matter of providing an answer to the question 'Why conduct an exercise?'

This need may be influenced by:

- Lessons identified and/or lessons learned
- Operational observations
- Review or change of arrangements, policy and/or plans
- New equipment, procedures, or practices
- Personnel requirements (i.e. training, practice and/or assessment)
- Legislative or regulatory requirements.

By combining an understanding of the organization's needs and the potential gaps between the required and actual level of capability, the exercise need can be derived.

When you start a new exercise two pieces of information are key: What is your goal and what are the circumstances you work in? The goal gives you the rationale for the project and the circumstances are the boundaries you can act within and where the need occurs.

Once the need is understood, it may be determined that an exercise is not the most effective and efficient means to achieve it. It may be more appropriate to conduct training or education activities to address capability gaps. These may be combined with or conducted before any exercise.

At this point the exercise aim, objectives and scope should be developed, which provide direction for the subsequent detailed planning, conduct and evaluation of the exercise.

2.3 Exercise aim

The exercise aim is a statement of intent that gives direction to what will or is desired to be achieved by the exercise. The aim statement can be as generic or as specific as required to meet the needs of the exercise. A sample exercise aim could be e.g. Identifying and evaluating an innovative solution that can bridge a crisis management gap you are experiencing in your daily operations.

There should only be one aim for an exercise. A clear aim leads to a series of objectives that will suggest the most appropriate style, size and complexity of the exercise.

The essential components of an exercise aim are 'purpose' and 'context'. For example:

- [purpose]: test the response to a passenger plane crash on the airport.
- [context]: in accordance with the airport emergency plan.

The aim should begin with a verb and be positive, clear, concise and achievable. Commonly used verbs and their application are:

- **Test**: To evaluate the abilities, aptitudes, skills or performance of a capability or aspects of that capability in addressing a task or a challenge or combination of both.
- **Assess**: To determine the value, significance or extent of, or to appraise a capability, plan, process or procedure.
- **Practice**: To improve a capability's performance.
- **Develop**: To grow into a more mature or advanced state, a capability, plan, process or procedure.
- **Review**: To exercise in the context of going over a plan, process or procedure with a view to improve it, or ensuring that it is contemporary best practice.
- **Explore**: To examine the potential of a capability, plan, process or procedure.
- **Validate**: To establish the soundness of, or to corroborate a plan, process or procedure.
- **Demonstrate**: To display or exhibit the operation or use of a capability, resource, procedure or process.

2.4 Exercise objectives

Exercise objectives are specific statements describing what is to be achieved by individuals, groups or agencies participating in the exercise. While there should only be one exercise aim, there may be many exercise objectives.

An objective is defined as "something that one's" efforts or actions are intended to obtain or accomplish; purpose; goal; target" (Goal vs Objective: www.diffen.com). So coming from your gaps and the exercise context, now you have to clearly define your exercise objective(s) in a SMART way.

This is an acronym for Specific, Measurable, Achievable, Realistic and Time-bound.This is the prerequisite for formulating clear research questions.

Exercise objectives:

- must be set and agreed on very early in the concept development phase
- must be clear and concise
- should be simple (contain a limited number of aspects) and written in commonly understood language
- should not include words such as 'timely', 'effective' and 'efficient' unless those terms can be quantified and measured.

What should be really achieved in the exercise? Starting with a brainstorming session for each goal and exercise context is strongly advised. What is the core? What is the most important part of it (maybe there is even more than one)?

A common approach to writing objectives is the use of the SMART model. The application of SMART objectives in the exercise management context is:

- Specific: emphasises the need to be specific, rather than general. This means the objective is clear and unambiguous, without vagaries or platitudes. To make objectives specific they must state exactly what is expected.
- Measurable: emphasises the need for including criteria for measuring progress towards attainment of the objective.
- Achievable: emphasises the importance of objectives that are realistic and attainable within the parameters imposed by the exercise.
- Relevant: emphasises the importance of making objectives relevant to the exercise aim and the needs of participants.
- Time-bound: specifies when the results can be achieved.

2.5 Standards and performance measures

It is essential that a range of measures should be developed that allow the exercise to be evaluated and reported on. These measures should be used by the:

- exercise planning team to design the exercise inputs
- exercise facilitators to guide participants
- exercise evaluators to measure performance during the exercise.

Standards, where they exist, provide evaluators with a benchmark against which to assess performance. Based on the standards, KPIs (key performance indicators) can be derived for the exercise to assess whether or not the exercise fulfilled the objectives.

Measures may be developed from these standards as well as existing procedures or protocols. In the absence of standards, the exercise planning team may need to work with the relevant agencies to define the measures to be used to assess performance.

Standards are used to quantify the objectives and reflect aspects of tasks/capabilities that are critical to successful performance. That is, what evidence can be used to support the evaluation? A plan to summarize the necessary data, which can then be used to evaluate the exercise, is key for a successful exercise evaluation. The plan should reflect who will collect the data, when and how. An evaluation approach and the corresponding performance measures can be defined based on the data collection plan to evaluate whether the objectives were met or not.

It can also be useful to break objectives down into smaller component sub-objectives to help evaluators understand the focus areas for evaluation.

2.6 Scope

The exercise scope describes the boundaries in which the exercise will be conducted. Defining the scope of the exercise should identify what is to be included, as well as what is not to be included in the exercise.

There is often pressure from outside influences to amend or add to the aim, objectives and/or scope as the exercise planning evolves. This is known as 'scope creep' and should be avoided.

The exercise scope should:

- be broad enough to achieve the objectives
- consider the level of commitment of key participating agencies
- inclusive of the private sector
- private sector
- not be beyond the capability of participants (test but do not break)
- consider the level of involvement of participants (first response only, up to an incident control centre, or district/regional or state coordination centre)

Examples of exercise scope statements:

- For a single-agency exercise: The scope of this exercise includes existing members of the local unit of the State Emergency Service and procedures as described in the local unit's standard operating procedures(SOP). The exercise will not include higher levels of

management within the service (above the unit level), members of the public or other agency personnel.

- For a multi-agency exercise: The scope of this exercise includes those agencies with a role e.g. in the airport emergency plan. The exercise will not include any higher level of management of any organization above the forward command level or members of the general public.

It should not be forgotten that an exercise context consists of all involved people, who are somehow part of the gap (within your organization or outside). Furthermore, an exercise context consists of equipment and infrastructure. But also, the weather conditions can be important. And last but not least the human factor is key.

2.7 Exercise concept document

Using the proposed exercise need, aim, objectives and scope, the exercise concept can now be further developed and documented. The exercise concept document is used to obtain the direction and authority to conduct the exercise. The exercise concept document should include details of the following:

- exercise need
- exercise aim
- exercise objectives
- exercise scope
- participating organizations
- governance and management structure (for planning the exercise)
- public information requirements
- proposed evaluation methodology
- proposed budget
- proposed timelines

2.8 Exercise Roles

During the exercise life-cycle, there are various roles that must be performed. This Guide refers frequently to these roles. In many cases, an organization or individual holds multiple roles. The major roles discussed include:

Organizer: The organizer is the organization that drives the process of exercise organization. Typically, the organizer takes the lead role in setting the goals for the exercise, choosing the measures that need testing, establishing the planning team(s), leading the planning process, and providing

resources to coordinate and execute the exercise. In some cases the organiser's role is split among several stakeholders that share the competency and mandate to conduct exercises in a field. In this case, an organiser could include one authority that appoints another organisation to lead and moderate the exercise with the help and approval of a Steering Committee.

Planner: Planners are organizations or individuals that participate in planning of the exercise.

Participant (also Participating Organization, Participating Stakeholder, Victim Actors etc.): A participant is an organization or individual that will play its role during the execution of the exercise. Individuals participating in the exercise itself will not be aware of the exercise scenario in advance. However, participating organizations may designate some individuals to participate in the exercise, and other individuals to take part in planning.

Exercise Director, Moderator or Leadership Team: There is a person or team that directs the exercise. The responsibilities include:

- Setting up and dismantling the exercise environment;
- Starting and ending the exercise;
- Acting as the central point of contact for questions and problems which arise in the course of the exercise;
- Making ad hoc changes to the plans or calling a premature halt to the exercise in the event of serious complications which cannot be resolved;
- Facilitating tabletop exercises;
- Managing the scenario;
- Coordinating supplies for the exercise participants (e.g. catering);
- And other related duties.

In smaller exercises, such as desktop exercises, these responsibilities may lie entirely or mostly in one key person, possibly called the Moderator. In larger exercises, these roles may be more finely subdivided, possibly with an exercise director, scenario manager, and other support players, possibly acting jointly as the exercise leadership team. In this guide, we generally use the terms director or moderator to encompass this range of responsibilities.

Monitor or Facilitator: The roles of monitors and facilitators are related and overlap. In this guide, the term monitor is used to apply to both. Those in this role brief the participants on the initial situation before the exercise, and inject new information during the exercise. They then observe and record the actions and decisions of the participants during the exercise, checking performance of the tested measures, noting effectiveness and weaknesses, communicating with the moderator, and providing much of the material that will be required for evaluating the exercise.

Observer: Observers are individuals or organizations that are invited to observe the exercise, without participating nor monitoring performance. They may include stakeholders who are not otherwise

participating, such as additional organizations outside the scope of the exercise (e.g. neighbouring regions or countries), public authorities that do not have an active part to play in the exercise, or others.

Evaluator: Evaluators are those individuals involved in the process of evaluating the exercise. These may include some or all of the same people and organizations who participated in planning and/or the exercise itself.

3   Exercise design

3.1 Introduction

Having established the aim, objectives and scope of your exercise, the style is determined and the exercise planned and written to achieve the objectives. The context gives lots of opportunities to come up with a specific scenario. The scenario is dependent on different things: gaps, available practitioners (number, role within organization etc.), available facilities and equipment. Writing a distinct scenario follows the same approach as writing a script for an exercise - who does what, when, where, with what equipment. It is important that the scenario reflects the circumstances under which the gap appears. [1]–[6]

3.2 Choosing a suitable style

The aim and objectives of the exercise will help you determine the most appropriate style or styles needed. The exercise management team does not have to restrict itself to only one style. Building progressive exercise programs or using several different styles is often useful. In general there are also very different ways how people can acquire new knowledge but a basic rule is that the more active the participants can be, the greater the success of the training.

The style chosen will be influenced by other factors that may include:

- Skills or experience of the exercise management team
- Training needs
- Commitment of key staff
- Venue availability
- Availability of participants
- Other commitments
- Lead-time
- Time available to conduct the exercise
- Resources available

Thinking about the current capabilities of an organization you are working in, there could be considered, for instance, operational aspects (common operational picture tools), or organizational processes (e.g. definition of roles and responsibilities when emergencies occur). Most likely, when considering what is currently in place, there could also be focus on what is missing or what can be improved. A structured approach is needed to identify your problems. Every part's experience is key,

but it may not be enough. Broadly, exercise styles can be categorized as discussion-based, functional or field exercises which will subsequently be discussed in more detail.

3.3 Discussion exercises (DISCEX)

Discussion exercises are built around a discussion of a scenario. Participants can explore issues in depth and provide verbal responses to situations. Discussion exercises are useful for developing agreed approaches to particular events, assessing the effectiveness of plans, building relationships, and exploring novel ideas or approaches to managing emergencies. Discussion exercises often involve personnel who work at a strategic level brainstorming solutions to problems.

Discussion exercises are a cost-effective and efficient exercise method. They tend to be more free flowing, informal and exploratory than other exercise types. They can be conducted away from operational environments, often needing only a room and a whiteboard. They may be conducted as a stand-alone exercise, prelude to a functional or field exercise, or part of a graduated series of exercises.

3.3.1 Seminars

Seminars are informal discussions, unconstrained by real-time portrayal of events and led by a presenter. They are generally employed to orient participants to, or provide an overview of legislation, strategies, plans, policies, procedures, protocols, response resources, and/or concepts and ideas. Seminars usually involve examining the plan/procedure through the use of a scenario and then discussing its key features.

Seminars may be useful to:

- induct new personnel
- train or assess personnel
- highlight key elements of a plan
- examine a plan.

3.3.2 Agency presentation

An agency presentation is a discussion forum where participants present an action plan relevant to their agency's operational function. The agency is given a problem or issue in advance so it can prepare its presentation. Agency presentations can lack realism and immediacy, but they provide a useful review of existing procedures and encourage the development of new approaches. Agency presentations can be written and conducted with short lead times and are cost and time efficient. They are useful as learning activities, particularly when they are used to explore responses to a

simulated threat or scenario in a non-threatening environment. Agency presentations may be useful to:

- consider strategic or tactical issues
- focus attention on the resources available at a given time and date
- share resource and procedural information
- build networks and develop a shared understanding of different agency capabilities and approaches
- make a presentation to stakeholders.

3.3.3 Hypothetical

A hypothetical (Tabletop) is a style of discussion exercise where problems are posed by a facilitator and considered by a panel of individuals 'on their feet'. The facilitator keeps the activity moving by asking probing questions and introducing unexpected events as the scenario unfolds.

Hypotheticals are often conducted in front of an audience of emergency managers and other stakeholders, and require careful preparation and a relatively longer lead-time than other discussion exercises. They are relatively inexpensive to prepare and run, although an experienced and effective facilitator may be hard to find. Hypotheticals are a particularly effective way to build a shared understanding of different approaches to problems. They are also useful for simulating operational stress by requiring participants to analyse complex problems and develop appropriate responses in real time. Participants are normally playing the roles they have in their organization, so it is important that all needed roles are filled by a suitable participant.

This exercise type may be useful:

- when you intend to give little or no prior notice of problems to be resolved
- to share resource and procedural information
- to make a presentation to an audience
- to assess a decision maker's ability to "think on their feet"
- if you seek to create a degree of operational stress.

3.3.4 Syndicate progressive

Syndicate progressive exercises introduce problems of developing complexity to be considered by groups in syndicate. The term progressive refers to the graduated development of complexity that will usually occur in an emergency situation and which may be replicated in the exercise via a series of special ideas. Each problem contains a statement and three or four questions designed to focus syndicate attention along a desired path. For example, given a particular set of circumstances, a

series of problems could focus on prevention, preparedness, response and then recovery. Syndicate exercises are relatively inexpensive to run but require careful preparation.

They are useful for exercising groups of strategic managers or team leaders and promote sharing experiences and building common approaches to complex problems by ensuring multi-agency representation in each group. Syndicate exercises have a strong learning focus as they encourage participation in small groups. This exercise type may be useful to:

- progress through phases of a problem or event or course of action
- encourage understanding of another agency's roles and responsibilities
- obtain different possible solutions to a common problem
- bring together differing backgrounds and experience levels
- examine strategic, political or complex issues.

3.3.5 Workshops

Workshops differ from other discussion exercises, in the way that the focus is on achieving or building a product (e.g. a draft plan or policy). Workshops can be employed as part of a graduated series of activities to determine solutions to exercise and/or operational problems.

A workshop may also be used to produce standard operating procedures (SOPs). To be effective, workshops must be highly focused on a specific issue, and the desired objectives must be clearly defined.

3.4 Functional exercises

Functional exercises are closely related to discussion exercises, but normally take place in an operational environment and require participants to actually perform the functions of their roles. They are designed to test or practice a particular function; for example, managing an incident or emergency in an Incident Management Team using maps and notional resources, or from within an emergency operations centre. Functions within the environment are conducted as if a real event were happening outside. Functional exercises are normally run in real time (for the case that there is interruption (debriefing, etc.) an exercise clock(real time) is used which can be stopped and started again.

Scenario information is fed to participants in a manner similar to the way they would receive it 'in the real world', be that via phone, email or web-based incident management systems. The input of scenario information is managed by the EXCON team, under the direction of the exercise controller, in accordance with the order and timeframe detailed in the master schedule of events (MSE). Participants' performance is monitored by exercise facilitators and the tempo of the exercise can be

increased or decreased by regulating the flow of exercise inputs. The aim and objectives of the exercise will determine the amount of interaction the facilitators have with exercise participants.

The exercise planner should be aware that large functional exercises may be complex to prepare and manage. The complexity may lie in developing realistic problems and occurrences and in the writing of the scenario. Likely responses must be planned for and contingencies made for unexpected actions. Functional exercises can generate significant administrative work, both in preparation and conduct. They can be expensive to prepare, but their major advantage is that they can be played out many times with different participants, enabling standardization and promoting consistency.

This exercise type may be useful:

- to practice, develop or assess procedures within a functional centre
- to practice, develop or assess decision-making skills within a centre
- to assess the interaction of the functional centre with field teams and other functional centres
- where there is no need to activate resources external to the centre
- when there are insufficient funds to activate resources external to the functional centre.

Any exercise regime has a place for both functional and field exercises. Functional exercises are generally constructed to place emphasis on control and coordination and it is this level that they are most suited to. The actions of notionally deployed organizations can be predetermined to bring out specific lessons at the higher levels. Functional exercises can be specifically designed to test higher decision-making levels without deploying tactical-level units – therefore this style of exercise can be cost-effective.

3.5 Field exercises

Field exercises involve deployment of personnel to a simulated incident or emergency. These exercises may involve elements of functional exercises and often test control arrangements as well as 'on the ground' skills. A major field exercise often follows a series of discussion or functional exercises; or they can take the form of a demonstration, drill or full-scale deployment.

Complex field exercises can be very expensive given the number of people involved. A major field exercise will need an exercise management team to write it and numerous directing staff to design and conduct it. Designing the exercise can be time and resource intensive – generating a significant administrative load and demanding highly skilled staff. Despite these disadvantages, major field exercises are an effective way to simulate the likely events and occurrences in emergencies that rarely occur, but for which responders need to be prepared. In some circumstances, they are the only chance for responders to apply some of their skills or work with other agencies in a realistic setting.

This exercise type may be useful:

- to practice, develop or assess the competencies of on-ground personnel
- to evaluate the effectiveness of inter-agency coordination and cooperation
- to evaluate the activation of an emergency plan
- to consolidate a progressive exercise program
- if your objectives require deployment of field personnel.

3.5.1   Drill-style exercises

Drill-style exercises are a coordinated, supervised activity employed to test a single specific operation or function in a single or multi-agency environment.

Drills are commonly used to provide training on new equipment, develop or validate new policies or procedures, or practice and maintain current skills. They are typically small scale field exercises within a single organization to allow the participants to consolidate and apply their gained knowledge.

Drills are used to:

- create a narrow focus, measured against established standards
- provide immediate feedback and the opportunity to reset and rerun the exercise multiple times
- provide a realistic operational environment
- consider performance in isolation.

3.6 Exercise tools

It should be noted that several web and system-based proprietary products are available to support the conduct of simulations and exercises. Exercise managers should investigate these independently to determine if they are suitable for their own purpose:

https://www.openex.io/en/ : OpenEx is an open source platform allowing organizations to plan, schedule and conduct crisis exercises. OpenEx is an http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=50294ISO 22398 compliant product and has been designed as a modern web application including a RESTFul API and an UX oriented frontend.

https://eden.sahanafoundation.org/wiki/BluePrint/Event : Sahana Eden is an open source software platform which provides a range of solutions for Disaster Management practitioners to help them reduce the impact disasters have on our communities through tracking the needs of the affected populations & coordinating the responding agencies & their resources.

https://taskjuggler.org/ : Task Juggler is a modern and powerful, Free and Open Source Software project management tool. Its new approach to project planning and tracking is more flexible and superior to the commonly used Gantt chart editing tools.

3.7 Exercise scenario

Writing of the exercise scenario cannot begin until its aim, objectives, scope and style have been finalized and approved. Given the aim, objectives, scope and style of the exercise to be conducted, the exercise is developed by the 'general idea' and 'special idea(s)'. Depending on the aim and objectives of the exercise the writing team can use former exercises and scenarios from other organizations as a basis. The writing team is a key element of developing an exercise. Writing an exercise requires distinct skills and knowledge. For small exercises, this may be drawn from the planning staff, while on larger exercises the writing team may be drawn from several agencies and/ or locations. When considering personnel as exercise writers, the following criteria should be applied to selecting appropriate writers:

- where possible they should have formal training in writing exercises
- they should have relevant skills and experience in the subject matter they are writing exercise problems for.

3.8 General idea

The general idea is a broad statement of background information designed to provide exercise participants with the knowledge that would be available during a real event or emergency. It should clearly reflect the context in which the gap exists and on which the exercise objectives are based. The general idea is usually issued to participating agencies or personnel well in advance of the event as part of the exercise briefings. The general idea may also give detailed information about specific industries, local events or background information on particular hazards (i.e. chemicals or seasonal threats).

3.9 Special ideas

Special ideas are used to drive the exercise. They provide realistic problems, incidents or information for participants to react to as they would on the job.

A chronological sequence should be prepared to provide information as the exercise unfolds. Personnel with specific roles are issued with special ideas at predetermined times to control the flow

of events. These are often "disguised" in the form of a telephone call, news report or other simulated medium.

The term "special ideas" is predominantly used in discussion exercises. The terms 'inputs', 'injects' or 'serials' are often used in the context of functional or field exercises.

Special ideas are used to:

- progressively develop the exercise scenario
- provide additional information to participants
- pose problem(s) for participants to solve
- place limits on participants' actions
- force action by participants.

Whatever the exercise writers decide to 'inject', this should be as brief and to-the-point as possible.

3.10 Developing a master schedule of events

The master schedule of events (Annex II) is prepared by the exercise planning team and is used to:

- detail the sequence of events, particularly on the day of the exercise
- indicate the timing of each event
- identify who is responsible for which tasks
- provide EXCON staff with a 'script'
- provide guidance for the pace and direction of the exercise.

Managing timing is an integral part of the master schedule. Some exercises require time to be compressed. For example, a flood discussion exercise might require a period of 48 hours to be compressed into six hours to achieve the outcome required. On the other hand, a field exercise requiring participants to apply practical skills may need to run in real time (or extended time) to meet its objectives. Varying time must be managed carefully given that, for example, compressing time too much can seriously reduce realism.

An effective master schedule of events should contain:

- serial or inject number
- timing of each inject
- intended responder to the event
- short summary of the event (scenario information)

- desired or expected outcome
- link to relevant control document (if applicable) or other serials
- EXCON member (or functional area) responsible for the inject
- notes section to record completion time or other instructions.

The complexity of the master schedule of events will depend on the size and scale of the exercise. While a master schedule of events should be also prepared for a discussion exercise, it will be a much simpler document.

The exercise controller uses the master schedule to control the exercise while it is happening. They will ensure any problems are rectified and make alternative arrangements to keep the exercise flowing. The exercise controller can modify the flow and progress of the exercise to ensure the objectives are met. This may require a temporary halt to the exercise, changes in its direction, or speeding it up or slowing it down.

When developing an exercise, it is important for the planning team to anticipate and analyse the potential range of possible responses to a given injection. In some cases, 'branches' of alternative serials may need to be designed to accommodate the range of possible directions an exercise may take.

4 Exercise staff

4.1 Overview

The roles of exercise staff may change as the exercise moves through the phases of the exercise management model. There will be dedicated roles and responsibilities during the planning phase, although the responsibilities may change when the time comes to conduct the exercise.[1]–[6]

4.2 Exercise planning function

Exercises need to be carefully planned and managed. Even the smallest of exercises require a coordinated approach to their design, conduct and evaluation. The function of the exercise planning team and identifying the functions that need to be managed are essential to ensure the success of any exercise.

Figure 4-1: Planning Process

Exercise planning staff functions may include some or all of the following:

- writing
- logistics
- evaluation
- media
- observer

- safety

- legal

- Chief Role play

- experts with special functions : alpine, dynamiter, etc.

4.2.1 Exercise director(s)

The exercise director(s) provides strategic oversight and direction on the planning, conduct and evaluation of the exercise. The exercise director(s) is responsible for approving the aim, objectives and supporting documentation, including the concept document, exercise plan and exercise instructions. In multi-agency exercises there will often be more than one exercise director. It is quite normal in those circumstances for the major participants in the exercise to each provide an exercise director for strategic advice and authority. The exercise director(s) provides the authority to conduct the exercise; however they do not have a hands-on role in the planning or conduct phases. The exercise report will be provided to the exercise director(s) at the conclusion of the exercise so that appropriate action can be taken.

4.2.2 Exercise planning team

The planning team will consist of those directly involved in the planning of the exercise and should include representation from participating agencies. It may have multi-agency representation and is chaired by the exercise controller. The planning team assigns roles and responsibilities in accordance with the exercise planning governance structure. It identifies which functions are required for the exercise and develops plans and strategies such as the:

- exercise concept document
- aim and objectives
- scenario development and exercise inputs (exercise writing)
- logistics plan
- detailed budget proposal
- risk management strategy
- evaluation strategy
- media strategy
- observer program
- exercise plan and instructions.

4.2.3 Writing function

Depending on the complexity of the exercise, the planning team will establish one or more exercise writing team(s). The exercise writing team(s) will report to the exercise planning team and is responsible for the detailed development of the master schedule of events, scenario and supporting documentation required as inputs or reference material during the conduct of the exercise.

Examples of subject matter that may require specialized writing teams include:

- scientific information (plume modelling etc.)
- investigation
- development of a casualty bank
- media.

An exercise writing team may comprise only two or three people for a smaller exercise or many in the case of a large exercise. The team(s) should include subject-matter experts to ensure accurate, realistic and sufficient documentation is prepared. To ensure continuity throughout the exercise, members of the exercise writing team(s) should be appointed to roles in the EXCON team during the conduct of the exercise.

4.2.4 Logistics function - real life support

The logistics team will report to the exercise planning team and be responsible for identifying, sourcing, setting up, maintaining and repatriating the physical resources and services required for the conduct of the exercise and related activities. It is also responsible for developing the risk management plan.

A member of the logistics team should be appointed to undertake the role of logistics officer in the EXCON team during the conduct of the exercise.

4.2.5 Evaluation function

The exercise evaluation coordinator or team will report to the exercise planning team and is responsible for planning and coordinating all aspects of the exercise evaluation (including exercise management), and documenting the findings in a post-exercise report.

Evaluation roles should be identified during the planning process, ensuring that team members have the relevant subject-matter expertise. Where possible, staff involved in the exercise evaluation team should not have any other exercise appointment.

4.2.6 Media/public relations function

The media coordinator or team reports to the exercise planning team and is responsible for developing the communications plan, including implementing real and pseudo media strategies.

4.2.6.1 Real media

This function looks after the media and public information strategies throughout the planning and conduct phases of the exercise. This may include:

- briefing government, industry partners and stakeholders
- developing a public information strategy.

Clear and early identification of a consistent message is essential. The real media function is also responsible for managing any media issues that may arise during the exercise.

4.2.6.2 Pseudo media (simulated media)

This function is responsible for writing media inputs and coordinating the extent of pseudo media required for the exercise. Pseudo media can add realism and pressure to exercise scenarios and may include pre-written news reports, as well as live footage or online reporting.

4.2.7 Observer function

The exercise planning team needs to consider whether an observer program is appropriate. The observer function is responsible for coordinating the exercise experience for observers, including VIPs. This involves balancing expectations, exercise requirements, agency interests, security restrictions and available resources. These activities would include, but are not limited to:

- arranging transport and accommodation
- managing cultural and protocol issues
- the reception of visiting personnel
  organizing social and after-hour activities.

4.2.8 Safety function

In the implementation chapter, the following must be taken into account:

- what dangers you will eliminate and which you will keep under control;
- what risks you need to reduce;
- what requirements apply to you; and

- what opportunities are available and beneficial.

Running an exercise creates potential risks for stakeholders. To ensure safety the following considerations should be reviewed before the exercise begins:

- Has a risk management plan been established?
- Is everyone trained to perform his or her task?
- Have clear safety briefings been delivered and understood?
- What SOP exists to cover safety issues and do they apply during the exercise?
- Are safety officers in place to monitor safety during the exercise?
- What contingency plans have been prepared?

A dedicated team for ensuring safety is required, or the planning team identifies the need for creating a safety team according to the type of exercise, or alternatively if this is a direct responsibility of the planning team.

4.2.9 Legal function

The exercise planning team will identify the need for exercise-related legal advice. These requirements could include, but are not limited to:

- contingent liability
- applicable legislative issues
- liaison on unique "legal" issues pertaining to the exercise.

4.3 Planning meetings

The planning team has primary responsibility for the design, conduct and evaluation of the exercise. This responsibility is managed through a range of planning meetings. The diagram below provides an overview of exercise meetings in the exercise cycle.
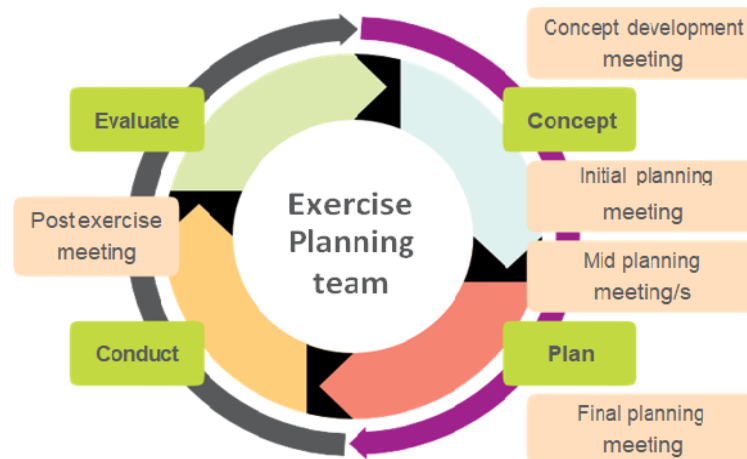
Figure 4-2: Planning meetings

4.3.1   Concept development meeting

The purpose of the concept development meeting is to discuss, consider and agree on the broad exercise concept. It should confirm the need and answer the question, 'Why do we need to conduct an exercise?' Consideration may be given to the exercise aim, objectives, evaluation methodology, key dates, exercise localities and participants. The outcome of the concept development meeting should be general agreement on the exercise concept and sufficient guidance to develop a concept document.

4.3.2   Initial planning meeting

The initial planning meeting is perhaps the most important of the planning meetings: it provides the broad agreement on the exercise framework and thus enables further planning to proceed. The initial planning meeting aims to identify how the approved exercise concept will be implemented to achieve the exercise objectives. The exercise concept document must be used as the basis for discussions and as many stakeholders as practicable should be included in this process. The outcome of the initial planning meeting should be broad agreement on the exercise parameters and sufficient guidance to develop the exercise plan.

Due to the importance of this step and as Aristotle said, "well begun is half done" the participants designed a template for D8.2 to D8.8 (Annex III) which corresponds to the Initial/Draft Plan Form. This document designed functional due to the fact the planning of a UC is a dynamic procedure and we are at least 1 year before will take part in each UC.

4.3.3   Ongoing planning meetings

The purpose of planning meetings is to discuss and refine exercise management arrangements and review the status of exercise planning. These meetings also allow for the identification and management of any issues that arise during the process. Depending on the complexity of the exercise it may be necessary to conduct several planning meetings.

Specialist working groups (such as writing teams) may need to meet separately and more often.

Meetings should be planned in advance, have compulsory attendance, be minuted and use action items to ensure identified activities are completed on time. Planning meetings are more effective when stakeholders ensure the same representatives attend throughout the planning process.

4.3.4   Final planning meeting

The purpose of the final planning meeting is to review all exercise planning and confirm that planning is complete, and all arrangements are in place for participants, exercise staff and logistics. The scenario and all documents should be validated – this can be achieved by conducting an exercise run of part or all of the exercise.

4.3.5   Post-exercise meeting

The purpose of the post-exercise meeting is to finalize the exercise and related activities. This will include the exercise evaluation and any subsequent reporting activities that need to be undertaken. The post-exercise meeting may also identify issues and suggest treatment options for future exercises.

A draft exercise report should form the basis of discussion at this meeting.

4.4 Other planning issues

4.4.1   Risk management

Risk is inherent in every emergency service operation and could be defined as 'the chance of something happening that will have an impact on objectives'. It also states that risks can have a positive and a negative effect on outcomes.

Most legislation reflects the importance of managing workplace risk by requiring employers to adopt a systematic approach to managing risks to health and safety in the workplace and to eliminate any foreseeable risk if not reasonably practicable to control the risk. The employer must also consult with employees when decisions are made that could affect their health or safety.

Risk management is about identifying potential variations from what we plan or desire, and managing those variations to maximize opportunity, minimize loss and improve decisions and outcomes.

Managing risk means identifying and taking opportunities to improve performance, as well as taking action to avoid or reduce the chances of something going wrong.

In the context of designing, conducting and evaluating exercises, a systematic risk management approach will reduce the degree of uncertainty and increase decision-making accuracy and the likelihood of positive outcomes.

Exercise planners should consider risks that may occur during the conduct of the exercise (e.g. urgent duty driving, safety of venues), as well as risks to the exercise itself (e.g. impact of a real event, industrial action) as part of the risk management process.

The development and maintenance of a risk management plan and risk register is an integral part of the planning process. Exercise planners should refer to available materials that are specific to risk management for more guidance.

4.4.2 Exercise venue

The planning team will need to secure an appropriate venue for the exercise. The type of venue may differ significantly depending on the style of exercise. Planners should consider availability and suitability when choosing a venue, taking into account factors such as legal requirements:

- decisions and directives that apply to your organization and activities;
- legislation (national, regional or international), including statutes and regulations;
- orders issued by regulatory authorities;
- permits, licenses or other forms of authorization

but also factors such as:
- occupational health and safety
- visibility of exercise activities to the public/media
- realism
- vulnerability to damage
- rehabilitation issues
- access
- available services (e.g. power).

It is essential to conduct a site inspection before the exercise. A professional assessment/inspection may be required to assess a venue's suitability or risk. A contingency plan may be required in case a venue becomes unavailable. When conducting a field exercise at a venue it is vital to ensure that arrangements/agreements are in place in relation to:

- legal indemnities
- responsibility for damage/restoration.

4.4.3 Finance

All stakeholders should have a clear understanding of the financial arrangements in place for the exercise, including:

- management of any exercise budget
- guidelines for exercise expenditure
- approval and payment of any overtime
- responsibility for the rehabilitation of damaged facilities.

4.4.4 Real media releases

Real media releases may be issued before, during or after the exercise. Media releases are useful to inform the public about the event and any disruptions it may cause, or to raise the profile of the responding organizations.

4.4.5 Notification to residents

As a matter of courtesy and good public relations, as well as to identify unforeseen stakeholder issues, residents and businesses close to the exercise site should be advised of the forthcoming event – especially if it could interrupt day-to-day activities. Exercise planners should involve community stakeholders during the design stage wherever the exercise might disrupt normal community activities.

4.4.6 Community engagement

Depending on the aim and objectives, exercises can benefit from community involvement. Exercise planners should consider whether it is appropriate to include the community in the actual conduct of the exercise. Local involvement (e.g. in a community evacuation exercise) promotes resilience in the community by raising awareness of local plans and encouraging preparedness. Community members or representatives can be involved throughout the exercise management process and can provide invaluable advice about possible exercise needs that exist or plans that the community would like to practice or test.

As a minimum the local community needs to be engaged so it understands and is aware of any impact or disruption the exercise may cause.

4.4.7 Selecting role players

Using people to 'role play' disaster victims or other roles can add realism to an exercise. However, it does add an extra element of risk that needs to be managed.

When selecting people to role play, the following should be considered:

- Some individuals may react adversely to receiving moulage (make-up simulating injuries) and being placed in a scenario that might cause them to recall painful experiences. Exercise managers should ensure appropriate debriefing and psychological first aid is available if required.

- Role players should fully understand the nature of the required role.

- Role players should not have experienced a major incident in the past that is still a sensitive issue for them.

- Role players should not have any existing conditions that may affect their role in the exercise; for example, pregnancy or medical conditions such as asthma, epilepsy, blood pressure anomalies, cardiac conditions, back problems, sensitive skin or claustrophobia.

- Role players should not be on medication that may affect their role.

- Use of minors in an exercise has legal ramifications including consent and is not recommended. Children are also more likely to act outside their role.

- Exercise staff should investigate the respective workplace/occupational health and safety legislation or other relevant legislation to determine the extent to which their duty of care applies to role players and obtain advice about issues such as insurance coverage.

5 Exercise documentation

5.1 Introduction

Exercise managers should spend enough time to properly document the exercise. Documentation provides information for the people involved in designing, conducting and evaluating the exercise. Good documentation can also allow an exercise to be used more than once in certain circumstances, providing a valuable return on the time invested.

This section provides a framework for the different documents that may be useful to manage an exercise. Exercise documentation is essential for a number of reasons:

- verbal instructions are not reliable
- documents form a permanent record of what has been planned and undertaken
- documents guide the running of the exercise and support succession planning
- documents help to gain commitment to the exercise.
- documents allow to use the same concepts and approaches for future exercises[1]–[6]
-

5.2 Exercise management documents

The amount of documentation and the detail required will vary considerably, depending on the size and complexity of the intended exercise. However, as a guide should be considered obtaining or generating the following:

- exercise scoping documents
- exercise concept document
- planning meetings agenda and minutes
- exercise plan
- detailed scenario documents
- exercise instructions
- post - exercise report.

Each of these documents plays an important role in the management of exercises and will contribute significantly to the success of your exercise.

5.2.1 Exercise scoping documents

Exercise scoping documents will help you to answer the question 'Why do we need to conduct an exercise?' and may consist of previous exercise/incident debriefs that identified areas of performance needing attention.

5.2.2   Exercise concept document

The exercise concept document is the authority to conduct the exercise and provides a broad overview of what is to be achieved and how. The document's purpose is to provide a conceptual framework around the planning of an exercise. It will provide background information, objectives, governance structure, an overview of the scenario and key participating agencies.

The concept document will be approved by the exercise director(s), giving the planning team the authority to formally begin planning activities.

5.2.3   Planning meetings agenda and minutes

During exercise planning it is vitally important that records of proceedings are kept. Minutes of any meeting form a useful background for decisions and make writing subsequent exercises easier. Minutes should record decisions, allocate tasks to specific individuals and provide action deadlines.

5.2.4   Exercise plan

The purpose of the exercise plan is to outline the method by which the exercise will be designed, conducted and evaluated ([Preliminary Plan(P.P.) & Final Exercise Plan (F.E.P.)](#)).

The exercise plan describes the aim, objectives and performance measures and the subsequent plan for the data collection for the exercise. It should provide guidance on all issues relating to the design, conduct and evaluation of the exercise. It should also outline the program of related activities with proposed dates and sequence of events. Proposed participants and exercise management arrangements should be identified in addition to planning milestones and resource considerations.

While the exercise concept document serves as the initial overview and authority to start exercise planning, the exercise plan is developed in the planning phase and may need to be updated as planning progresses.

The exercise plan will not be distributed to exercise participants; however, some of the information will need to be reproduced in the relevant exercise instructions.

5.2.5   Detailed scenario documentation

The type and size of the exercise will influence the required level of scenario documentation. As a guide the following should be considered:

- detailed description of the scenario (including general and special ideas)
- master schedule of events (including exercise timings and sequence of inputs)
- control documents – any information that participants require to support their decision-making (e.g. plans or weather forecasts)

- background information and profiles (e.g. information on people, businesses or places mentioned in the scenario and inputs).

Any scenario documentation should be clearly marked as 'exercise material only'.

5.2.6   Exercise instructions

These are provided to exercise participants and staff in advance of the exercise. While all instructions will contain similar information, they may need to be tailored to their respective audiences. They should provide enough information and be accompanied by any pre-reading that the participants or staff members require to take part in the exercise.

Exercise instructions (also known as the participant's handbook) for participants may include:

- joining instructions
- exercise overview
- contact information
- situation (general idea)
- other information as required.

Other specific exercise instructions may need to be created for:

- evaluators
- EXCON staff
- observers
- Role players
- Annex for logistics

5.2.7   Evaluation documentation

Evaluation documentation is used by the exercise evaluators to collect information for conducting a thorough evaluation of the exercise. The evaluation documentation will be prepared during the design phase of the exercise and may include a range of documents, checklists and/or templates provided to participants, facilitators, observers or evaluators to collect appropriate information. Participant questionnaires can also be a useful tool to evaluate specific parts of the exercise, especially when it comes to the testing of new technologies, plans or methods.

5.2.8 Post-exercise report

The author(s) of the post-exercise report will be determined by the exercise director(s) and will include input from the evaluation team. The post-exercise report should include:

- a description of the exercise
- lessons identified
- a narrative of key events
- lessons learned
- an evaluation summary addressing the attainment of the exercise aim, objectives and standards
- key observations and possible treatment option

6 Conduct phase

6.1 Overview

The exercise conduct phase includes starting, managing and finishing the exercise. The principles outlined during the conduct phase may be applied across discussion, functional and field exercises.

Regardless of the size of the exercise being conducted, exercise managers should be aware of a range of exercise management issues to be managed, including but not limited to:

- pre-exercise activities
- roles of exercise staff during the conduct of the exercise
- occupational health and safety (OHS) issues
- briefings
- debriefings.[1]–[6]

6.2 Pre-exercise activities

A range of pre-exercise activities will need to occur before an exercise begins. These activities are required to prepare agencies and individuals for their participation in the exercise. These activities may take the form of:

- notifications – agency/ political/ senior officials/ community/ media
- rehearsals/new training
- final review of exercise documentation
- final technology and communication requirements and checks
- establishing facilities
- equipment familiarization
- discussion exercise(s), seminar(s) and/or workshops
- development or review of plans and procedures.

6.3 Exercise staff roles

The people who run and support the exercise conduct are called the exercise control (EXCON) staff. Also known as the directing staff, they are drawn from the participating agencies. EXCON staff should be identified early to allow for clear lines of command and communication to be established, as well as enable the rehearsal of EXCON functions. EXCON staff should avoid any unnecessary interference with exercise participants during the exercise and should be clearly identifiable by wearing tabards.

The role of EXCON staff is to ensure the exercise is conducted in a safe and effective manner. They should monitor participants, help create a realistic atmosphere, keep the exercise running smoothly,

make rulings for participants, introduce scenario information and guide participants towards achieving the stated objectives.

The generic exercise control structure (below) provides an overview of common roles in exercise control. Some functions are common to all exercises; others are only relevant in limited circumstances.
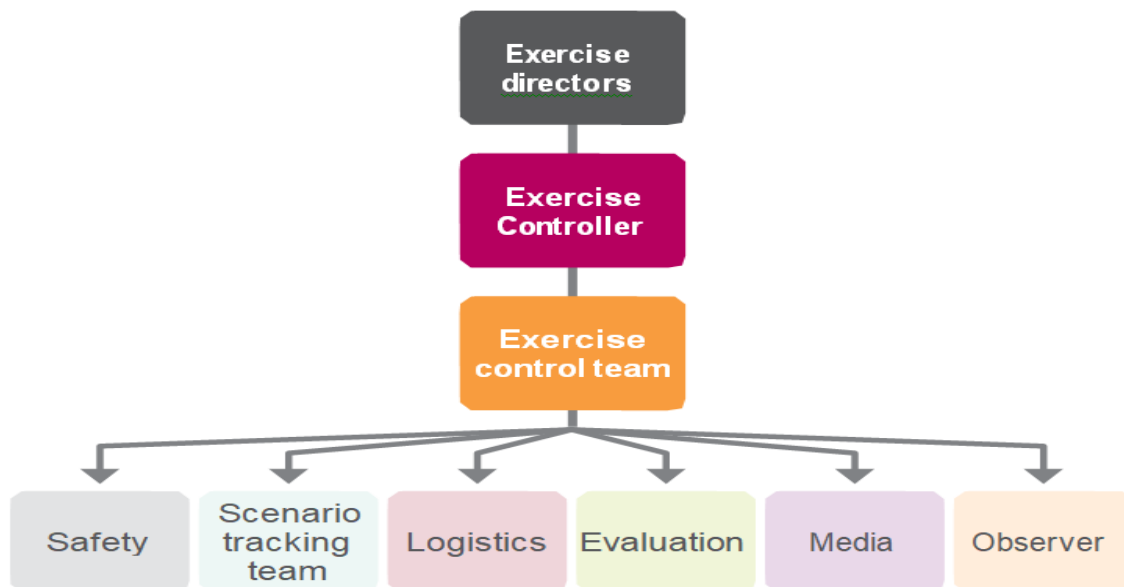
Figure 6-1: Roles schema

6.3.1 Exercise controller

The exercise director(s) appoints an exercise controller who is in turn responsible for selecting and appointing people to the functions required to conduct the exercise.

The exercise controller is responsible for:

- managing all exercise conduct activities to ensure adequate opportunities to achieve the exercise objectives
- safety and risk management during the conduct phase in accordance with the approved plans.

6.3.2 Exercise control (EXCON) function

The exercise controller leads the EXCON team, which is responsible for:

- overseeing the conduct of the exercise
- ensuring that participants have the opportunity to achieve the aim and objectives
- managing the master schedule of events

- simulating activities not performed by the participants
- contributing to the post-exercise report.

6.3.3 Safety officer(s)

Safety must take precedence over exercise activities and safety officers must immediately intervene if safety is compromised. Depending on the size of the exercise, more than one safety officer position may be required: these officers will report to a chief safety officer who is directly responsible to the exercise controller. Safety officers should be located and monitor activity wherever field activities are being conducted.

6.3.4 Scenario tracking team

The scenario tracking team monitors the progress of the master schedule of events and injects scenario information wherever required to progress the exercise. It may also simulate the roles of organizations that are not participating in the exercise.

6.3.5 Logistics – RLS(real life support)

A logistics officer may be appointed to coordinate and manage logistic requirements. This may involve:

- liaising with venue owners or operators
- coordinating catering and welfare requirements
- arranging transport of personnel and equipment
- commissioning the construction of props, models or other elements required for the scenario
- procuring additional equipment, consumables and resources (e.g. lighting, portable toilets)
- setting up registration or administration areas for exercise control.

6.3.6 Evaluation

The exercise evaluation coordinator or team will manage the evaluators during the conduct of the exercise. This includes ensuring that evaluators are able to move between venues to observe key parts of the scenario and be present at the various debriefs. The evaluation coordinator also ensures the relevant evaluator reports are submitted in a timely fashion at the conclusion of the exercise.

Further detail on the role of evaluators is detailed in the evaluation chapter of this handbook.

When the evaluation is done, the following should be considered:

- time required to evaluate operations, monitor performance, participation in training and operation of the management system;
- the skills required to assess compliance and response to emergencies;
- the systems necessary to maintain and update relevant documented information;
- technology, equipment and infrastructure available and those that may be needed.

6.3.7   Media

The media function is responsible for handling any real media requirements during the exercise, including distributing a media release before the exercise begins (if necessary) and coordinating exercise footage and interviews to promote the exercise in news media.

6.3.8   Observers coordinator

Exercises may attract observers, ranging from VIPs to members of participating organizations. To ensure observer safety and minimize disruption to the exercise, the following should be considered:

Appointing an observer's coordinator to ensure:

- an observer's program is developed
- a set of joining instructions is distributed, detailing a meeting time and place on the day, along with an overview of the exercise
- where possible an exercise viewing area is established, where observers have access to the exercise, but can in no way interfere with proceedings
- any personnel escorting observers are thoroughly briefed on the exercise scenario, its aim and objectives
- personnel are allocated responsibilities that may include meeting and escorting observers to predetermined viewing areas, explaining the exercise aim and objectives, providing a running commentary on the exercise and answering observers' questions.

6.3.9   Other possible roles

Depending on the size and complexity of the exercise it may be necessary to appoint personnel to fulfil other roles.

Role player manager – role players are integral to the conduct of many field exercises but they must be closely managed. The success of an exercise can largely depend on how well they are briefed and work within the parameters of the exercise.

Role players provide realism and create an emotional perspective to the activity. They adopt the roles of casualties, victims, bystanders and other people affected during an exercise. Role players are often made up to appear injured (known as moulage). Sometimes they are used to act as media representatives or political figures, particularly in field exercises.

The role player manager's duties normally include:

- ensuring role players are registered on arrival
- pre-exercise role player briefings, including details of expected 'role' behaviour and possible reactions during the exercise
- coordinating moulage
- positioning the role players pre-exercise
- managing role player welfare (e.g. hydration, shade, warmth, sun screen) during the conduct of the exercise
- arranging for debriefing and deregistration of role players at the conclusion of the exercise.

All role players must be registered before they are deployed into the exercise and then deregistered before leaving the exercise area.

Following the exercise a formal debriefing for role players provides them with a vital forum to share their experiences of the exercise. A unique insight into how the responders dealt with the situation can also be gained.

It is also important to allow role players to de-role following an exercise. That is, they need to go through a process of 'stepping out of character' to minimize any unexpected psychological effects. This can occur naturally as part of the exercise debrief, or may require a conscious activity where the role player has been in-role for some time, or the role has been particularly demanding.

It is also important that role players are thanked after participating in an exercise, given they are often volunteers who give up their time to help out.

Staging area manager – manages the deployment of participants from a predetermined staging area during field exercises.

Security – manages access to exercise sites.

Damage control – in all field deployment exercises the damage control officer is responsible for assessing, recording and reporting on any damage caused during the exercise. In some instances any such damage may need to be repaired and the venue/site returned to pre- exercise conditions. The damage control officer should ensure that pre- and post-exercise venue inspections are completed.

IT and communications support – manages systems being used during the exercise.

6.4 Briefings

For the best opportunity to achieve the objectives and ensure a successful exercise, it is essential that briefings are conducted for participants, role players, EXCON, evaluators and observers.

All exercise briefings should follow a consistent format for ease of understanding, as well as support any exercise instructions people have received before the exercise.

Briefings should be accurate, concise and sequential. The SMEACS format is recommended because it presents the important information in a logical sequence and is currently used by many emergency management agencies:

- Situation – describes what has happened and perhaps what has been done
- Mission – describes what is to be achieved (aim, objectives)
- Execution – how objectives are to be achieved: what needs to be done, not how to do it
- Administration and logistics – administrative and logistical arrangements (e.g. transport, catering)
- Command and communication – command structure and communication arrangements for the exercise
- Safety – including welfare and 'No Duff' explanation

Specific briefings will be required for the different functional roles being undertaken during the conduct phase.

Consider specific briefings to the following groups:

- exercise staff
- observers
- role players
- participants
- evaluators
- media.

6.4.1 Exercise control (EXCON)

Briefing exercise staff is essential to allow them to clarify their role during the exercise and ensure they understand the scenario and how it will unfold. In some cases it may be appropriate to conduct a rehearsal with EXCON staff to confirm timings and familiarize them with the exercise environment.

Exercise briefings usually include details relating to the general idea, special ideas, master schedule of events and safety instructions, and amplify information contained in the exercise instructions and/or exercise plan. The EXCON briefing should include the:

- exercise aim and objectives

- key aspects of the scenario

- roles and responsibilities of EXCON staff

- communications plan (including organizational structure)

- information, communication and technology systems

- intervention strategies (circumstances under which EXCON will intervene and re-guide participants)

- actions in the event of unforeseen circumstances

- Post-exercise requirements.

Individual exercise staff may receive separate instructions tailored for their specific function, such as:

- evaluator instructions

- site staging instructions

- arrangements for the media and visitors

- damage control

- specific safety instructions.

6.4.2 Participants

Briefing of exercise participants is essential to allow them to engage effectively in the exercise. The briefing should include:

- exercise aim and objectives

- evaluation focus and expectations

- roles and responsibilities during the exercise

- exercise scope and rules

- information, communication and technology systems

- actions in the event of unforeseen circumstances

- No Duff' arrangements (see definition below)

- post-exercise arrangements

- safety.

6.4.3 Safety briefing

The safety briefing should include information relating to:

- site-specific considerations (e.g. hazards, out of bounds)

- 'No Duff' arrangements (see definition under 6.4.7)
- identifying, managing and reporting hazards
- the process for reporting any injuries incurred during the exercise
- monitoring environmental conditions
- monitoring the welfare of all participants throughout the exercise (including stress-related health issues).

6.4.4 Evaluators

In addition to the general briefing about the aim and objectives of the exercise, evaluators need to understand their role as articulated in the exercise evaluation plan. This may include:

- observing participants' responses and recording their observations
- observing and assessing processes, procedures and techniques
- evaluating and reporting on the achievement of objectives.

6.4.5 Observers

Observers need to be briefed on any restrictions placed on them. It should be highlighted that they are only observing the exercise and should not provide input at any time, other than for a safety issue.

6.4.6 Role players

It is essential that role players are fully briefed on their involvement before the exercise begins, particularly on use of the term 'No Duff'.

Role players should be informed that they may withdraw from the exercise if they feel unsafe, unwell or anxious about events. The role player briefing should include the withdrawal process.

6.4.7 No Duff

All messages relating to authentic injuries or incidents must be prefixed by the word 'No Duff'. Should such an event occur, the safety officer, in consultation with the exercise controller, may pause or stop the exercise to manage the real event.

It is necessary to consider the elimination and reduction in the next priority order:

- elimination
- replacement

- technical controls and reorganization of the activity
- administrative control
- personal protective equipment.

Sometimes the word "SANREAL" is also used instead of "No Duff". Important is that everyone knows which term is used in the exercise.

6.5 Starting the exercise

For the exercise to start effectively, several activities need to be completed just before the scheduled start time. These may include:

- final test of information, communication and technology systems
- last-minute briefing for all exercise staff, confirming readiness to proceed.
- positioning simulated casualties, props and special effects
- positioning of EXCON staff and support personnel
- positioning of exercise participants
- advice to the exercise controller that all is ready.

An exercise can start in many ways although it must be coordinated by the exercise controller. Discussion exercises usually begin with the facilitator introducing the subject to the participants. Functional exercises may be started by an incoming message or a written script that normally introduces the first piece of scenario information. Usually field exercises will begin via a radio or telephone message that an incident has taken place, followed by some type of response by a participating agency.

6.6 Managing the exercise

The exercise is managed by EXCON staff in accordance with the master schedule of events. The exercise controller can call a temporary halt to the exercise to change its direction, speed it up or slow it down to ensure the exercise objectives can be achieved.

EXCON staff support the exercise controller by ensuring that all is proceeding well at each location and that appropriate inputs occur in accordance with the master schedule of events. EXCON staff needed to be prepared to react to participant responses and take appropriate action.

The EXCON team should conduct regular briefings to ensure effective management of the exercise; that is, momentum is being maintained and the objectives are being achieved. By maintaining

communication, EXCON maintains control and an overview of exercise activities. Situational awareness may also be achieved by:

- monitoring the actions of participants and role players
- audio/video and/or other information technology aids
- field reports from exercise staff.
- the exercise management strategy should be linked to the exercise aim and determine the intervention strategy for EXCON staff.

EXCON staff may:

- pause and guide (if participants and exercise activities are moving away from the objectives)
- stop, debrief and reset (if exercise activities move well outside of the intended objectives)
- stop the exercise (in the event of a major safety issue).

EXCON staff may also:

- let mistakes run to see if the participants can overcome barriers to the achievement of the objectives.
- let perceived mistakes run to see if the participants develop a new method for achieving the objectives (Is it actually a mistake or is moving outside the expected response actually the best course of action?).

6.7 Exercise conduct issues

6.7.1   Exercise communication

There will normally be two components to exercise communications: one for participants and one for exercise staff. Exercise staff need to be in contact with one another throughout the conduct stage of the exercise. This is most commonly achieved by using mobile phones and/or a separate radio network. Normal communication protocols are appropriate for the control network. It is crucial that exercise staff protocols are identified and agreed to before the day of the exercise and communicated to all members of EXCON. It is preferable for EXCON staff to have a phone network uninterrupted by external calls. Receiving other business calls during an exercise can be extremely distracting and disruptive to the exercise. Participants' communication is normally on radio channels monitored by exercise staff and other agency personnel. To avoid confusion with real events, exercise messages

sent on normal agency communications channels must be prefixed by the word 'exercise'. In field and functional exercises in particular, maintaining a separate communications network between the participants and EXCON needs to be considered. This provides a platform for the managed introduction of exercise special ideas and/or serials and also serves as a control mechanism for the exercise controller.

Participants' communication is normally on radio channels monitored by exercise staff and other agency personnel. To avoid confusion with real events, exercise messages sent on normal agency communications channels must be prefixed by the word 'exercise'.

In field and functional exercises in particular, maintaining a separate communications network between the participants and EXCON needs to be considered. This provides a platform for the managed introduction of exercise special ideas and/or serials and also serves as a control mechanism for the exercise controller.

6.7.2   Site security

Exercises may need to be cordoned off from the public. Equipment, props and other resources may also need to be protected. A security coordinator may be appointed to:

- manage site access
- coordinate protection of physical assets
- establish perimeters
- prevent unauthorized filming and photography and the disclosure of operational procedures.

6.7.3   Identification of exercise staff

In all exercises the proper identification and roles of exercise staff is essential. This serves to differentiate them from participants and role players and, in large multi-agency exercises, to identify particular roles. This is normally achieved through the use of tabards, name plates or arm bands depicting role title (e.g. safety officer).

6.7.4   Managing real events

The term 'No Duff' or similar that all participants are aware of should be used to indicate that a real event or injury has taken place. It will then be the decision of the exercise controller as to whether the exercise needs to pause or stop.

6.8 Finishing the exercise – ENDEX

Finishing the exercise is a controlled activity. The exercise controller is responsible for finishing the exercise in a pre-arranged manner and communicating an appropriate message to all participants. An accepted term for concluding the exercise is 'ENDEX'.

The exercise may end in accordance with:

- a designated time, according to the master schedule of events
- achievement of all objectives
- completion of designated tasks
- if it is not safe to continue with the exercise
- if other activities (including a safety breach or actual responses) hinder the progress of the exercise or render the objectives unachievable.

In any case the exercise controller must consider strategies, should it be necessary, to terminate the exercise before the pre-arranged time.

During a field exercise a progressive stand-down of agencies/capabilities can begin when they have achieved their respective objectives, as long as it does not affect the continuing functions of other participants and has been approved by the exercise controller. It is important not to overlook the activities required to repatriate the exercise site and return equipment to its pre-exercise state. While this will largely be the responsibility of logistics, the time and effort required should not be underestimated and the staff involved must be given every opportunity to participate in designated post-exercise activities.

6.9 Debriefing the exercise

A series of debriefs will be required at the conclusion of an exercise. Depending on the scale of the exercise these may include:

- hot debrief (immediately post-exercise) for:
    participants
    EXCON
    role players.
- agency-specific debrief
- formal multi-agency debrief involving all participants and EXCON staff
- exercise management debrief.

In all cases the debrief must be planned and communicated to those who need to be involved.

While briefings usually start with general information and then become more detailed in subsequent briefings, the reverse is the case with debriefs. That is, detailed information is collected at a lower level, with that information contributing to higher-level and subsequent debriefs.

An essential component of a successful exercise is the ability to debrief the activities of the conduct phase. This particular aspect can be undertaken at various times during the exercise depending on the activities occurring at the time. The debrief may be conducted at the end of an activity or at the end of the exercise and is generally divided into two categories: hot debrief and formal debrief.

6.9.1 Hot debrief

An immediate debrief should be provided for all participants and staff to capture information and feedback while it is still fresh in people's minds. This debrief would normally be conducted by the team leader or supervisor of a functional area or capability to help identify issues or concerns.

The hot debrief enables all participants to gain an insight into how the exercise was conducted and how their role may have influenced the exercise.

The hot debrief should include but not be limited to:

- what worked well
- what did not work well
- safety issues
- what, if any, immediate action is required

It may not be possible to capture the responses of all participants in a face-to-face forum. Consideration should be given to the development of a participant survey, which can be completed remotely and collated as part of the exercise evaluation.

6.9.2 Formal debrief

Conducting a formal debrief after the exercise provides an opportunity for key agency representatives and exercise staff to highlight areas of concern, as well as the positive outcomes of the exercise.

This debrief is more formal and is led by an experienced facilitator. It should focus on strategic multi-agency aspects of the exercise that may require further discussion and clarification, and possibly recommend future actions.

Participants' contributions to debriefings can be verbal or written. In either case information collected at formal debriefings must be recorded so it can be used in the exercise report.

As with briefings, a standard format for debriefings should be adopted and an agenda distributed and followed.

At the start of any debrief the facilitator should clearly state the aim and objectives of the debrief. The following is a guide to the issues that may be covered in an exercise debrief:

- analyse the exercise to determine what worked well, what didn't work well and areas for improvement without apportioning blame
- address specific questions that arise from the achievement or non-achievement of objectives
- acknowledge good performance
- seek constructive information
- focus on improving procedures and training
- explore the appropriateness and effectiveness of the exercise itself
- record relevant information to enable reports to be compiled
- summarise major points and suggest follow-up action.

Debriefs are not to be confused with the evaluation process; however, the outcomes will form part of the data collected for completing the post-exercise report.

7   Evaluation

7.1 Objectives

Why evaluate?

The process for evaluating an exercise should start with the initial concept meeting and continue until the final debriefings have been completed, reports are issued and corrective actions are agreed on.

Exercise managers need to consider whether it is their responsibility only to evaluate the exercise and report on the outcomes to be resolved, or whether they should also implement and track corrective actions as part of the resolution process.

Even the smallest of exercises should incorporate an exercise report, although this will be less detailed than for a large-scale exercise. Conducting a thorough evaluation is not a minor undertaking, and may require dedicated staff and careful consideration.

Evaluation can include input from all aspects of the exercise and should be informed by:

- outputs from the exercise planning process and planning meetings (e.g. KPIs)
- observations from exercise staff
- outputs from the exercise debriefs
- outputs from the participant interviews or questionnaires
- observations / reports from the exercise evaluator(s).

The output from the evaluation should be a written report. This might include observations, findings, treatment options or recommendations based on the information gathered during the exercise. The outcomes from one exercise may not be appropriate to all situations and therefore any corrective action needs to be carefully considered.

The exercise evaluation should include two components:

- Exercise outcomes [participants' performance against objectives], and
- Exercise management [what you as an exercise management team have learned / would improve]

For each of these components, the exercise report should attempt to answer the following questions:

- What did we plan to do [what were the objectives]?
- What did we achieve – how did this differ from what was planned [were objectives met and if not, how did the outcomes differ]?
- Why did it happen [what led to the objective(s) not being achieved as planned]?
- What can be done differently in the future [what improvements need to be made]?

Outcomes from an exercise should contribute to an organization's learning and improvement.

Evaluation methods are not designed solely for use during exercises; they are also transferable to real-time operations and other activities (e.g. training, performance reviews). While real-time operations will not be structured and pre-planned as exercises (particularly in terms of the scripting aspect), the design of objectives for the evaluation can be modified to reflect the active operational situation and gather lessons from the real-time deployment of capabilities. These types of lessons are an indispensable input to the development of any capability.

Sound objectives are essential not only to a successful exercise, but also to its evaluation. A good exercise planning team will produce SMART objectives. Evaluators should help with this process – in some instances they will need to identify objectives that need to be revised or improved to meet the required outcomes. Evaluators may be placed in the situation of being brought into the exercise late in the planning process where the existing objectives are not achievable and/or measurable and will therefore need to be revised. These objectives should conform to the SMART criteria; that is, Specific, Measurable, Achievable, Realistic and Time-bound.

A challenge for evaluators will be to ensure the objectives meet these criteria, and that standards or performance measures exist for them. The ideal situation for an evaluator is for a capability to have clear objectives with measurable standards. Where these do not exist, the evaluator will have to help develop measurable standards against which to evaluate.

The focus for evaluators during any activity should be on reporting against the objectives. On occasion, evaluators may identify things outside the objectives that merit reporting, but this is generally the exception rather than the rule.

In addition to the design of robust objectives, it is critical to identify the means by which achievement of these will be measured. This can be done via performance measures or standards, which may:

- exist as part of current standard operating procedures (SOPs), or
- need to be developed before the activity is conducted.

It may be that for the testing of new SOPs, such standards need to be developed as a product of the activity or through interaction with the relevant organisation. These will subsequently need to be tested and evaluated for their validity.

Standards provide evaluators with a benchmark against which to assess performance, and are used to quantify the objectives to reflect aspects of the task that are critical to successful performance. These aspects will determine what evaluators measure and use as will evidence to support their conclusions about performance during the activity.

The evaluation and overall assessment of the S&R platform, equipment and uniform will be done within T8.3. The pilot development and preparation of T8.1 will be used as a basis to define the overall evaluation process including the KPIs development, data processing, observations, and corresponding methods. At the beginning of this Task 8.3 in M15 the evaluation concept will be set up regarding technical, organizational and general requirements of the different pilots and a balanced methodological approach will be used to ensure the efficient and effective results generation. The evaluation concept can then be fed as a separate chapter into this user handbook. As a starting point for the development of the overall assessment and evaluation, the DRIVER+ Trial Guidance Methodology will be used. This methodology will be customized to fit to the S&R project needs. It will include important parts like the definition of responsible, the set-up of a data collection plan and the selection of the evaluation approach and key performance indicators (KPIs), the data quality check, the data analysis, and the data synthesis to generate the evaluation report. Each step will be defined at the beginning of T8.3 beforehand of the execution of the pilot use cases. This has to be done in a harmonised way to assure that the methodology reflects all different user needs and is applicable within all pilots.[1]–[6]

8 Conclusion

This handbook provides a detailed picture of key components, tasks and activities as well as key roles and responsibilities to be assigned for a successful and smooth exercise run. Through exercises, abilities and aptitudes can be evaluated. Skills or performance of a capability or aspects of that capability in addressing a task or a challenge or combination of both are also evaluated.

Exercises support to determine the value, significance or extent of, or to appraise a capability, plan, process or procedure in order to improve a capability's performance. They hold a key role in the context of going over a plan, process or procedure with a view to improve it, or ensuring that it is contemporary best practice.

Annex I: References

[1] "HSEEP Volume III: Exercise Evaluation and Improvement Planning." https://www.yumpu.com/en/document/view/50954812/hseep-volume-iii-exercise-evaluation-and-improvement-planning (accessed Jun. 28, 2021).

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[3] volume Overview, "Homeland Security Exercise and Evaluation Program, Volume I: Overview and Doctrine." Accessed: Jun. 28, 2021. [Online]. Available: www.fema.gov.

[4] "Risk management-Principles and guidelines." Accessed: Jun. 28, 2021. [Online]. Available: www.saiglobal.com.au.

[5] "Managing Exercises HANDBOOK 3 Australian Disaster Resilience Handbook Collection."

[6] "WWU_Wi_Driver_Handbook_LY_20200209_RZ.indd | Enhanced Reader." moz-extension://77e90361-63ee-428f-8e58-1ba413ba3077/enhanced-reader.html?openApp&pdf=https%3A%2F%2Fwww.driver-project.eu%2Fwp-content%2Fuploads%2F2020%2F02%2FTGM-handbook-FINAL.pdf (accessed Jun. 28, 2021).

[7] "Hellenic Fire Service, 8680/Φ.702.20/20-02-2009 Circular n. 115." .

ANNEX II Planning Readiness Exercises[7]

Preliminary Plan (P.P.) & Final Exercise Plan (F.E.P.)

a) The Preliminary Draft (P.P.) & Final Exercise Plan (F.E.P.) are prepared by the Planning Team (P.T.). The (F.E.P.) is submitted hierarchically with a reference of the head to the Organisation

b) The Final Plan of the Preparedness Exercise (F.E.P.) must answer all the following questions:

- What is going to happen? (definition-description of object, script and episodes)
- Why will it happen? (target objectives)
- When will it be done? (day-time-duration-start-end)
- Where will it take place? (space / place)
- How will it be done? (characteristics of the exercise / how it will be done / methodology / how the G.C. will be informed about the script and the episodes?)
- Who? (who will do it / with what resources / means / equipment)
- What After? what will be done after (valuation)
- In case of? (Provision of postponement (postponement of date or time of the event) or cancellation (cancellation of the event) in case of an actual event or for another reason)
- Other forecasts (allocation of space-hall, information of other competent Bodies. etc.)

c) The F.E.P. should predict the actions / steps to be taken, that may be omitted, simulated or merged.

d) Initially, the Objectives of the Exercise are determined for the development of the script and its episodes.

Indicative process of determining the Objectives of the Exercise:

- Definition of the object of the Exercise, its purposes, as well as the levels of planning-participation of forces, if it has not already been done
- Recording of possible objectives in Objective Description Sheets (O.D.S - pre plan)
- Identify what will be tested with the following method

A first record of the data is made:

- finding a possible area or facility (address etc)
- recording of key risk factors in the above area-facility for impact assessment (e.g. human lives (users, employees, residents, passers-by, emergency services personnel), infrastructure (equipment), property, environment, etc.)
- description of possible scenario-possible episodes
- recording the capacity of participants

- recording of risks and initial assessment of effects (risk) on the above key factors with possible developments (domino effects)
- development of a strategy for dealing with the incident by setting goals (e.g. prevention of a secondary accident, by what required means and with which actions of participants)
- development of regular response to the incident-stages of operations (detection-alarm, operation of automatic fire safety systems, creation of protection-exclusion zones (evacuation), control and reduction of the effects from the participants forces (e.g. rescue, extinguishing), restoration, etc.) .
- Identification of the required tools and systems involved
    - in size (e.g. pyrothermal loads, surfaces-volumes, distances, required times, etc.)
    - in resources (e.g. staff, involved Bodies, vehicles, material, means, equipment, PPE, etc.)
- The above elements are redefined by modifying a parameter e.g. the possible area or the possible scenario.
- When the O.D.S comes to a result acceptable to the members of P.T. then the objectives are finalized (i.e. the functions and the actions of those that will be tested), the script (1-2 proposals), the episodes (1 proposal and possibly 1-2 questions), the participants (as job descriptions and not their nomenclature), the assumptions - simulations, the place, the time and the duration as well as the levels of completion
- Especially for the duration of the exercise, the restrictions mainly on number of staff should be taken into account and the exercises should last less than a shift should be planned.
- Indicatively and not restrictively, important objectives are the control of the available resources, the control of the communications, the mobilization, the initial evaluation and the re-evaluation, the alert start, the control of the logistics, the control of the coordination between the involved Institutions etc.

e) An evaluation form / questionnaire is optionally prepared in order to utilize the experience that will be gained by all those involved in the Exercise so that a complete picture of what happened, what went well and what could be better handled. The evaluation form / questionnaire should encourage participants to answer freely, concisely and focused, in terms of competence and exclusively to the questions that have a direct view, involvement, knowledge or expertise of the subject.

Indicative sections of the Exercise Evaluation Form / Questionnaire:

- Statistics: Personal - Organisation (anonymous)
- Comments on the Plan: Scenario, episodes, realism, goals / objectives, assumptions / simulations, structure / methodology / execution process, levels of administration, control

and coordination, distribution of G.C and other actors, participation of Stakeholders, available media, audiovisual material, way of conducting - structure - methodology, place of conduct, time of execution and duration of execution, structure - content of evaluation form / questionnaire, other organizational issues etc.

- Comments on the Conduct:
  - o **Regarding the management-coordination of the Exercise for:** time management, coverage of modules and phases, information of participants / management / coordination, suggestions/ presentations, active participation - possibility of intervention, cooperation both between the Organisation forces at all levels of Administration, Control and Coordination (vertically and horizontally), as well as with involved Bodies (horizontally), use of available communications etc.
  - o **Regarding the responses (positions-answers-actions) of the participants for:** application of B.P (decision - recognition of implementation), actions, errors and omissions in response, implementation time - duration, decision - allocation of resources, exploitation/use of available resources, active participation-possibility of intervention, cooperation both between the Organisation forces in all the levels of Administration, Control and Coordination (vertically and horizontally) as well as with involved Bodies (horizontally), communications, risk identification, status assessment (risk), decision-making process and implementation of application of separate exclusion-protection zones, etc.

The comment of the execution can be done separately per module and / or per time phase of development (e.g. phases of recognition-mobilization, first response-detection, main response (consequences-loss management), and recovery):

- Comments on the achievement of goals and objectives of the Exercise (and why?)
- Other useful information (What are the benefits of the Exercise, what did the participant specifically gain, if the same problems are repeated and what, how much percent felt / experienced the state of emergency, etc.)

The above paragraphs should include:

- Identification of problems-formulation of observations on issues guidelines - procedures of education/staff training companies, etc.
- Formulation of proposals-improvements on the above issues

The forms / questionnaires are designed by the P.T., are included in the F.E.P., are reprinted by the Organisation to which the General Coordinator belongs to and are distributed with the care of the General Coordinator at the end of the Exercise. They should be anonymous and have enough

space for a written answer of the participant and / or multiple options (check list) with appropriate scales eg 1-4 or a-b or percentages (%), to record the degree of understanding, satisfaction, etc.

Indicative modules of Preliminary & Final Exercise Plan (P.T. and F.E.P.):

- Historical report-explanation of the code name-logo of the Exercise
- Characteristics and parameters of the Exercise
- Schedule-detailed program with sections and development phases
- Conducting process-means and methods of support and presentation of script and episodes per development phase. Specifically, messages can be used, for example, prints, audiovisuals, diagrams, tables, catalogs, organization charts, maps, etc. in theoretical Exercises. Similar to practical exercises, situations in the field can be used, for example, smoke appearance with the help of a smoke agent - announcement via radio or even involvement of a business center (e.g. "eyewitness" call emergency number 112, detection by closed circuit television in a road tunnel, etc.). For the success of the Exercise it must be understood by everyone "who sent (message-sender), how (sending method), what (message content) and to whom (recipient-recipient)" so that it is possible to test / check the goals that have been set
- Action recording forms-reports (situation assessment, action taken per episode, etc.). Especially for Exercises that last more than one day, a daily activity report or after action report (AAR) should be provided. This can be written and / or oral and include a summary of the Exercise for a specific period of time, e.g. last 24h and so on. the episodes that took place and a brief description of the actions on them, analysis of the situation, etc.)
- Training (optional), tests-preparation
- Budget (optional) including the cost of PM of the participants so that those responsible for the implementation of P.T. will be informed
- Evaluation
    - Exercise evaluation questionnaire
    - Evaluation Report

Exercise Order (E.O.) and Special Exercise Instructions (S.E.I.)

a) The E.O. and / or the S.E.I. are drawn up by the organization which is head of P.T. or the general coordinator and includes attached the F.E.P. In addition, the involved organisations may issue similar orders for the existing resources that will participate.

b) The E.O. is drawn up when the issuing Organisation orders the involving organisations for the conduct of the Exercise in accordance with the F.E.P.. In this case, the resources that will participate will be named and all the details will be adjusted.

c) The E.O. and / or the S.E.I. invite other involved Bodies that are considered necessary and have been simulated or omitted in the F.E.P.

d) In the E.O. the Teams are formed (named) and the other contributors / participants are appointed if they have not been defined by previous decisions. The decision to set up also provides for alternates for the smooth conduct of the Exercise.

e) The following sections are indicative and not restrictive-binding (may include different or additional elements as well as in a different structure / format):

Indicative modules of Exercise Order (E.O.) and Special Exercise Instructions (S.E.I.):

- Reference to the Final Exercise Plan (F.E.P.) of the Planning Team (P.T.) and its attachment as a Branch

- Brief description of the main characteristics of the Exercise according to the F.E.P. (including the code name, the object, the category, the place, the time, the degree of security, the Guidelines and the Business Procedures (B.P.) that will be tested-checked etc.)

- Indication of the main parameters of the Exercise according to the F.E.P. (including business process, Logistics and Administration (accreditation, food, liquids, travel, staff changes, fuel-consumables, uniform / clothing, etiquette, exercise / participation file, certificate of participation, compensation for them away from home, etc.), the Valuation Procedure, the modules and phases of development (e.g. hot evaluation), the Health & Safety of the participants (readiness of the Mobile Medical Unit, etc.), the Safety of the means-equipment, the order-cleanliness etc.) as well as the settlement of relevant issues (e.g. finding staff for the needs of the Exercise etc.)

- Incorporation of composition decisions (e.g. E.O., S.E.I.), reference to the Exercise Coordinator and to the head of organisations of regular and / or operational level

- Naming of resources (personnel, search-rescue dogs, vehicles-machinery, other equipment per Organisation), with the possibility of providing alternative-alternative resources (attachment as Annex). Care is taken for the circular participation of staff and coefficient naming codes in the Exercise

- Issuance of special orders-assignments (e.g. to organizer for reprinting the registration forms of the evaluation questionnaires, etc., to the Administrations of other Organisations for the issuance of their logistics, transfer approvals, etc.)

- Regulation of training issues (if provided by the F.E.P..) as well as appropriate preparation (control of vehicles, equipment, other means, communications, information of the staff - understanding of the examined Guidelines and the Business Procedures, etc)

- Coordination and instructions to the involved Bodies that will participate - updates - invitations. Challenging the issuance of parallel decisions for the safety of the staff and the success of the Exercise.

- Provision of a procedure for delaying the start, interruption, postponement and / or cancellation of the Exercise (e.g. due to a real event or other reasons) or exclusion - disengagement of specific resources

- Prediction - issuance of Press Releases, photographic and cinematographic coverage.

Annex III: Exercise Plan Form

List of Abbreviations - Acronyms

1. General information

1.1. Introduction

*some general information on the context of the exercise

1.2. Graduation

1.3. Time and place

1.4. General objective

1.5. Individual objectives

1.6. Health and safety of the participants in the exercise

1.7. Communications

1.8. Characteristics and parameters of the exercise

In terms of type in: As to the category in:

a)Periodic   a)Practical

b)non-Periodic   b)Theoretical

1.9. Exercise factors

Planning Team (P.T.)

Coordinator and Team

Role players

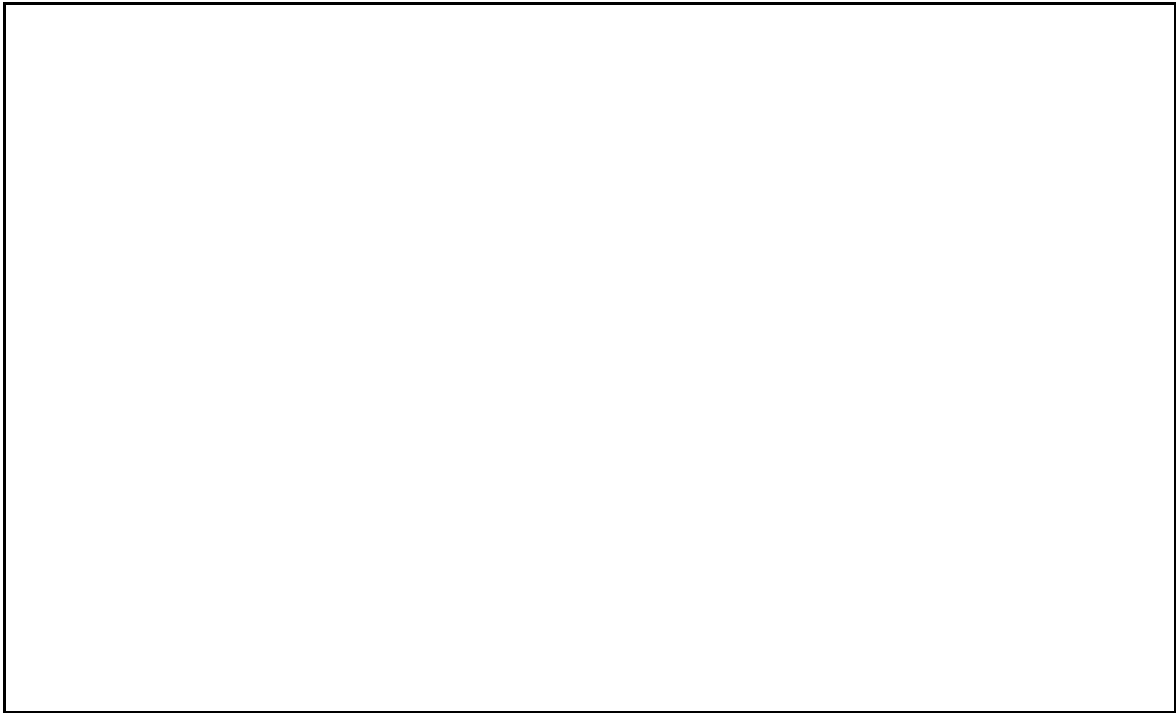**Observers**

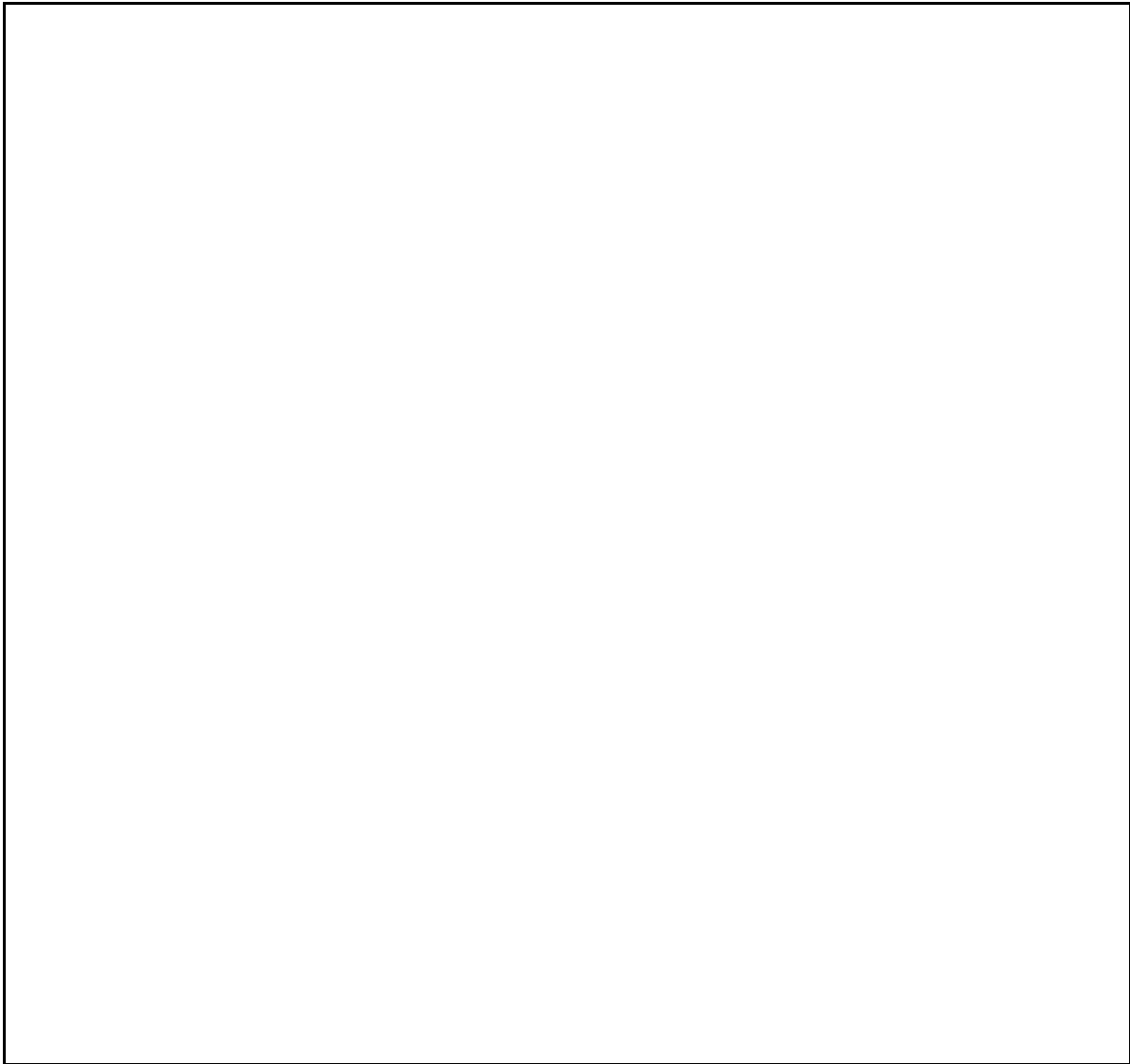**Evaluators**

Actors-Guests

Special Guests

2. Brief scenario of exercise - Initialization and mobilization of forces

3. Detailed scenario: Development, parts, steps and episodes of exercise scenarios

4. Orientation of Exclusion zones - protection zones

- Hot zone

- Warm zone

- Cold zone

- Free zone

5. Logistics - Administrative support

6. Details on Assessment - Evaluation of exercise

7. Accreditation - recognition

During the reception process of the participants in the field of exercise, their data will be checked and they will be issued an accreditation card. The typical method is the color differentiation

Participant category	Accreditation card color
Coordinator and Team	
Role players	
Actors-Guests	
Observers	

….	
….	

8. Certificates of participation

Annex IV: Initial/Draft Plan Form - Template for D8.2 to D8.8

Title of UC

1. Introduction

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some general information on the context of the UC (A use case overview included the Aims / Objectives of the Use Case or Scenario. Moreover, please insert in the description of the pilot the following information:

1. Weather condition for the pilot. Focus on the extreme weather condition (very warm, very cold, extreme wind etc) that could pose safety issues during the UC

2. If during the pilot you take into consideration possible terrorist activities that could lead to security issues during the operations).

2. Responsible End – User Organization

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3. Time (*) and place

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Please specify if some parts of the activities will be conducted over the night.

4. Components (*) / technologies that will be tested

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Please insert also in the description of the pilot the inventory of equipment that will be used during the search and rescue operations (like pneumatic powered tools, hydraulic powered tools, gasoline power tools, electric power tools etc).

5. First version of KPIs

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6. Participating technical support partners (internal) and other members of consortium S&R as Players, Observers and Evaluators etc

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7. External Participants as players, evaluators, actors-guests in UC

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8. Ethics Approval

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9. Gaps/ Problems that should be closed and context in which they appear

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10. Certificates of Participation

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11. Planning Team of UC

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