



Driving Innovation in Crisis Management
for European Resilience



D924.11 – MATERIALS FOR THE TRAINING MODULE I

SP92 - TEST-BED

MAY 2018 (M49)



This project has received funding from the European Union's 7th Framework Programme for Research, Technological Development and Demonstration under Grant Agreement (GA) N° #607798

Project information

Project Acronym:	DRIVER+
Project Full Title:	Driving Innovation in Crisis Management for European Resilience
Grant Agreement:	607798
Project Duration:	72 months (May 2014 - April 2020)
Project Technical Coordinator:	TNO
Contact:	coordination@projectdriver.eu

Deliverable information

Deliverable Status:	Final
Deliverable Title:	D924.11 – Materials for the training module I
Deliverable Nature:	Report (R)
Dissemination Level:	Public (PU)
Due Date:	May 2018 (M49)
Submission Date:	04/09/2018
Sub-Project (SP):	SP92 - Test-bed
Work Package (WP):	WP924 - Apply the guidance methodology and the guidance tool in Trials
Deliverable Leader:	EASS
Reviewers:	Pawel Gromek, SGSP Klaudia Tani, EOS-eu Marcel van Berlo, TNO Chiara Fonio, JRC
File Name:	DRIVER+_D924.11_Materials for the Training Module 1_PP.docx

DISCLAIMER

The opinion stated in this report reflects the opinion of the authors and not the opinion of the European Commission.

*All intellectual property rights are owned by the DRIVER+ consortium members and are protected by the applicable laws. Except where otherwise specified, all document contents are: “©DRIVER+ Project - All rights reserved”.
Reproduction is not authorised without prior written agreement.*

The commercial use of any information contained in this document may require a license from the owner of that information.

All DRIVER+ consortium members are also committed to publish accurate and up to date information and take the greatest care to do so. However, the DRIVER+ consortium members cannot accept liability for any inaccuracies or omissions nor do they accept liability for any direct, indirect, special, consequential or other losses or damages of any kind arising out of the use of this information.

Revision Table

Issue	Date	Comment	Author
V0.1	04/04/2018	Table of Contents	Marek Link, EASS (Task leader)
V0.2	02/07/2018	[Initial draft]	Marek Link, EASS Steven van Campen, XVR Lisette de Koning, TNO Michael Middelhoff, WWU Nicola Rupp, WWU Job Verkaik, HKV Emil Wrzosek, SRC
V0.3	04/07/2018	Review, edits and additions by JRC and XVR	Chiara Fonio, JRC Steven van Campen, XVR
V0.4	05/07/2018	Contribution to Section 3.3.,3.4,4.5 Review Contribution to section 4.7	Adam Widera, WWU Nicki Rupp, WWU Hanneke Vreugdenhil, HKV
V0.5	18/07/2018	Contribution to Sections 4.8 & 4.9	Drazen Ignjatovic, AIT Denis Havlik, AIT Georg Neubauer, AIT
V0.6	20/07/2018	Edits to sections 5.6 and 5.10	Anna Foks-Ryznar, SRC Emil Wrzosek, SRC
V0.7	27/07/2018	Edits to sections 5.8 and 5.9	Drazen Ignjatovic, AIT
V0.8	31/07/2018	Edits based on reviewers comments	Steven van Campen, XVR
V0.9	03/08/2018	Edits on TNA chapter 4, based on reviewers comments	Marek Link, EASS Steven van Campen, XVR
V0.91	10/08/2018	Preparation of final draft	Marek Link, EASS Steven van Campen, XVR
V0.92	17/08/2018	Final review	Klaudia Tani, EOS-eu
V0.93	21/08/2018	Final review	Marcel van Berlo, TNO
V0.94	24/08/2018	Implementation of reviewer's comments	Marek Link, EASS Steven van Campen, XVR
V0.95	28/08/2018	Final check and approval for submission	Tim Stelkens-Kobsch, DLR, Quality Manager
V0.99	29/08/2018	Final check and approval for submission	Peter Petiet, TNO, Project Director
V1.0	04/09/2018	Final check and submission to the EC	Francisco Gala, ATOS

The DRIVER+ project

Current and future challenges, due to increasingly severe consequences of natural disasters and terrorist threats, require the development and uptake of innovative solutions that are addressing the operational needs of practitioners dealing with Crisis Management. DRIVER+ (Driving Innovation in Crisis Management for European Resilience) is a FP7 Crisis Management demonstration project aiming at improving the way capability development and innovation management is tackled. DRIVER+ has three main objectives:

1. Develop a pan-European Test-bed for Crisis Management capability development:
 - a. Develop a common guidance methodology and tool, supporting Trials and the gathering of lessons learnt.
 - b. Develop an infrastructure to create relevant environments, for enabling the trialling of new solutions and to explore and share Crisis Management capabilities.
 - c. Run Trials in order to assess the value of solutions addressing specific needs using guidance and infrastructure.
 - d. Ensure the sustainability of the pan-European Test-bed.
2. Develop a well-balanced comprehensive Portfolio of Crisis Management Solutions:
 - a. Facilitate the usage of the Portfolio of Solutions.
 - b. Ensure the sustainability of the Portfolio of Solutions.
3. Facilitate a shared understanding of Crisis Management across Europe:
 - a. Establish a common background.
 - b. Cooperate with external partners in joint Trials.
 - c. Disseminate project results.

In order to achieve these objectives, five Subprojects (SPs) have been established. **SP91 Project Management** is devoted to consortium level project management, and it is also in charge of the alignment of DRIVER+ with external initiatives on crisis management for the benefit of DRIVER+ and its stakeholders. In DRIVER+, all activities related to Societal Impact Assessment are part of SP91 as well. **SP92 Test-bed** will deliver a guidance methodology and guidance tool supporting the design, conduct and analysis of Trials and will develop a reference implementation of the Test-bed. It will also create the scenario simulation capability to support execution of the Trials. **SP93 Solutions** will deliver the Portfolio of Solutions which is a database driven web site that documents all the available DRIVER+ solutions, as well as solutions from external organisations. Adapting solutions to fit the needs addressed in Trials will be done in SP93. **SP94 Trials** will organize four series of Trials as well as the final demo. **SP95 Impact, Engagement and Sustainability**, is in charge of communication and dissemination, and also addresses issues related to improving sustainability, market aspects of solutions, and standardization.

The DRIVER+ Trials and the Final Demonstration will benefit from the DRIVER+ Test-bed, providing the technological infrastructure, the necessary supporting methodology and adequate support tools to prepare, conduct and evaluate the Trials. All results from the Trials will be stored and made available in the Portfolio of Solutions, being a central platform to present innovative solutions from consortium partners and third parties, and to share experiences and best practices with respect to their application. In order to enhance the current European cooperation framework within the Crisis Management domain and to facilitate a shared understanding of Crisis Management across Europe, DRIVER+ will carry out a wide range of activities. Most important will be to build and structure a dedicated Community of Practice in Crisis Management, thereby connecting and fostering the exchange of lessons learnt and best practices between Crisis Management practitioners as well as technological solution providers.

Executive summary

This document describes the design of the DRIVER+ Training Module (TM) and how the TM working group came to this design. The primary target group of the TM are the Trial organisers and secondary other Trial stakeholders (e.g. policy makers and software developers). The TM should train and instruct them in applying the DRIVER+ Trial Guidance Methodology (TGM) and how to best use the supportive tools: Guidance Tool (GT), Portfolio of Solutions (PoS), Trial Action Plan (TAP) and Test-bed.

The TGM is developed such that Trials - organized to assess innovative solutions in Crisis Management (CM) - are prepared, executed and evaluated in a realistic, structured, rigorous, objective and data-driven manner. The TM is used within the DRIVER+ project to train the committee members of the 4 Trials and Final Demo. It also needs to become a sustainable project outcome such that external organisations who want to set-up their own Trial by following the TGM and using the supportive tools, are also trained in how to use them best. Therefore, the TM is marked as one of the important building blocks in innovation within CM by facilitating high-quality assessments of CM innovations (i.e. solutions) by proficient experts (i.e. Trial organisers).

The first step in designing the TM was done by conducting a Training Needs Analysis (TNA). Trial Committee members filled out an online survey indicating their training needs and which training methodologies they prefer. As the response rate was rather low (27%), additional data was collected via the TGM experts providing (also on-the-job) support to the Trial Committees. The main conclusions from the TNA are:

1. Particularly the preparation and evaluation phases of the TGM require training, because here a Trial differs from an exercise. The DRIVER+ performance measurement dimensions need to be introduced, allowing a proper definition on what needs to be measured and how the measurement dimensions are interrelated.
2. Dedicated training sessions need to be included on Ethical, Legal and Social Issues and the DRIVER+ Lessons Learned Framework (LLF).
3. The TM should clearly explain the interconnections between TGM and the developed supportive tools and Test-bed components as well as the solution integration procedure and how and when to use these tools.
4. Finally, it has to be further elaborated in how far the TM is able to address the needs identified amongst Trial committees so far. It may be concluded that a proper TGM application requires more than just a generic training and a supportive information system, but also a well-balanced network of domain experts offering different kind of support activities.

The TM will use a blended approach to facilitate all needs shown by the TNA and provide a feasible and effective learning strategy to practitioners. This means that the TM is partly self-directive and consists of both e-learning via EASS's Moodle system and a contact-phase in which TGM- and tool-experts provide more feedback, instruction, practice and guidance.

The first version of the TM will be provided in a consultancy-based, pragmatic manner to Trial 2, because this Trial is already advanced in its preparations. It is focusing on instructions/training on specific issues that arise during the preparation and evaluation phases (e.g. specific data analysis method or explanation of Test-bed components and how to integrate solutions). The consultancy/training efforts can directly provide input for the TM's second version, which will provide both e-learning (in October 2018) and a face-to-face training day (in November 2018). Based on the experiences with training the Trial Committees of Trial 3, 4 and the Final Demo, the final version can be designed also taking into account the ongoing discussions on sustainability of the project results.

Table of Content

1.	Introduction	9
2.	The context of learning and how this relates to the Training Module	10
2.1	The characteristics of learning	10
2.2	Learning in the context of DRIVER+	10
2.3	The issue of future trainees not knowing what they do not know.....	11
3.	Process followed to design the Training Module.....	12
4.	Training Needs Analyses	13
4.1	Set-up of the online survey	13
4.2	Responder background data	14
4.3	Knowledge, skills and competencies the TM should include.....	16
4.4	Methodological preferences and expectations per TGM phase.....	16
4.5	Training Needs based on the TGM Support activities.....	18
4.6	Recommendations for TM design	20
4.7	Conclusions	21
5.	Set-up of the Training Module: training goals, objectives and outcomes	22
5.1	Overall TM design	22
5.1.1	Blended approach: e-learning and contact-phase	22
5.1.2	Split in various sessions	22
5.1.3	TM versions 1 and 2.....	24
5.1.4	Other design decisions	25
5.2	Template for defining each session	25
5.3	Session 1: Introduction to Trials and the TGM.....	27
5.4	Session 2: The context of Trials – Why, Who and What?	29
5.5	Session 3: Preparation of the Trial	31
5.6	Session 4: Execution of the Trial	34
5.7	Session 5: Evaluation of the Trial	37
5.8	Session 6: Supportive tools	42
5.8.1	Session 6.1: Portfolio of Solution	42
5.8.2	Session 6.2: Guidance Tool.....	43
5.8.3	Session 6.3: Trial Action Plan.....	45
5.8.4	Session 6.4: Test-bed	46
6.	Training Module development and implementation plan.....	49
7.	Conclusions, recommendations and links/dependencies with other SPs/WPs.....	52
	References.....	53
	Annexes	54
	Annex 1 – DRIVER+ Terminology	54
	Annex 2 – Online TNA survey template.....	56
	Annex 3 – Full text responses from online TNA survey.....	60

List of Figures

Figure 4.1: Amount of responses per Trial committee	14
Figure 4.2: Division of roles in Trials and response rate	14
Figure 4.3: Experience in running exercises	15
Figure 4.4: Method preferences.....	17
Figure 5.1: Bloom’s Taxonomy Action Verbs (12)	27

List of Tables

Table 4.1: Responder’s training expectations towards phases in Trials	17
Table 5.1: Sessions and learning outcomes.....	23
Table 5.2: Definitions used in the simplified Frontex learning template.....	26
Table 5.3: Learning template for session 1	27
Table 5.4: Learning template for session 2	29
Table 5.5: Learning template for session 3	31
Table 5.6: Learning template for session 4	34
Table 5.7: Learning template for session 5	37
Table 5.8: Learning template for session 6.1	42
Table 5.9: Learning template for session 6.2	43
Table 5.10: Learning template for session 6.3	45
Table 5.11: Learning template for session 6.4	46
Table 6.1: TM development and implementation plan	49
Table A1: DRIVER+ Terminology.....	54

List of Acronyms

Acronym	Definition
6s-approach	6 step approach of the Trial Guidance Methodology
DR1 / DR2	Dry Run 1 / 2 – DRIVER+ specific events during the Trial
ELSI	Ethical, Legal and Social Issues
GT	Guidance Tool
KPI	Key Performance Indicator
LL	Lessons Learned
LLF	Lessons Learned Framework
PoS	Portfolio of Solutions
TAP	Trial Action Plan
TGM	Trial Guidance Methodology
TM	Training Module
TNA	Training Needs Analysis
LMS	Learning Management System (e-learning support)
SQF	Sectorial Qualification Framework (occupational standard)
RPL	Recognition of Prior Learning
ECTS	European Academic Credit Transfer System
EQF	European Qualifications Framework

1. Introduction

Innovation has been a consistent process in the private sector for many years. Recent trends show that over the past four decades, and predominately the last few years, innovation practices in the public sector have increased. However, the way it is normally presented leads to the conclusion that in the public sector there is still much left to be learned (1). It is not surprising therefore, to see the adoption of innovation arising in public debates and academic discussions. It starts from having a common shared understanding about the role and function of innovation. E.g. Akenroye presents in his paper: “Innovation may mean different things to different people, professions and businesses. (...) Additionally, innovation will not perform its intended purpose in an organisation until appropriate building blocks are put in place.” (1)

The project DRIVER+ is primarily concentrating on one of those building blocks: the assessment of socio-technical solutions in Trials with the overall goal to have significant impact on the effectiveness of the whole system of Crisis Management (CM) in the European Union. To support this assessment (i.e. setting up high-quality, useful Trials), the Trial Guidance Methodology (TGM) is developed together with supportive tools, which is documented in **D922.21 Trial guidance methodology and Guidance Tool specifications** (version 1) (2). The full implementation of the TGM will not depend only on having a descriptive framework, but mostly on the competencies and positive drive of staff to apply this methodology and supportive tools.

This deliverable **D924.11 Materials for the Training Module** describes the didactical approach of how and in which order different aspects of the TGM and the use of supportive tools should be taught, instructed and practiced. The Training Module should thus support the establishment of the building block of innovation management to have proficient personnel preparing, executing and evaluating Trials.

The creation of the Training Module (TM) is done in Task 924.1 by a group of TGM and didactical experts, further on referred to as the “TM working group”. Section 2 of this document describes the theoretical background of learning and its context to the DRIVER+ project. Section 3 presents the process followed by the TM working group to define the TM’s contents and delivery methods (i.e. the TM design). In section 4, the results from the Training Needs Analysis (TNA) are presented, meaning what it is that needs to be taught and practiced according to potential trainees, TGM experts and instructors. Then (section 5) the overall design of the TM and design choices made are documented, followed by a structured description of each session within the TM. Section 6 describes the action plan of how the TM’s content will be developed¹ and how and when this will be delivered to potential trainees. The document is completed by the conclusions, recommendations and interdependencies with other subprojects and work-packages within the DRIVER+ project in section 7.

This document is targeted at readers with an interest in how the TGM and supportive tools will be explained to potential Trial organizers and other stakeholders of a Trial (e.g. software developers of a solution being trialled). Readers are expected to have at least a basic understanding of the DRIVER+ objectives and the TGM, as well as a basic understanding of didactics and experience with contemporary education and training methods (e.g. having followed an e-learning module at least once and/or similar experiences).

¹ Note that this document does not contain the contents of the TM in detail, only a description of the TM and its delivery methods, together with design choices made to come up with this set-up. The decision to not include the TM’s contents in detail in this document is primarily based on the design-choice to produce an interactive, learner-personalized and partly e-learning based TM, of which the contents cannot be fully entailed in a textual document as this would lose the interactive and learner-personalized nature of the content (i.e. by transferring it in a textual document, the content would have to become generic-for-all and presented in a one-way communication line).

2. The context of learning and how this relates to the Training Module

This section describes the context of “learning”, as the TM’s main aim is to learn (i.e. teach, instruct and provide practice) in how to use the TGM and supportive tools best. In the design of the TM, educational theories are used about what learning actually is. Design in this case means determining the exact objectives of the TM, what it consists of and how it is delivered. The output of this design process is documented in Sections 4 and 5.

2.1 The characteristics of learning

To establish a well-functioning TM, it is important to understand which behaviour (i.e. learning) should be triggered by the TM. Learning can be defined as processing information that leads to acquiring or changing competencies. In other words: ideally learning results in change.

‘Processing’ relates to the cognitive and psychological mechanisms within an individual (i.e. the trainee) leading to the change of competencies. This can be described by three concepts:

- Construction: does an individual make use of his own (fore)knowledge?
- Interaction: does an individual make use of the insights of others?
- Reflection: does an individual integrate newly acquired knowledge and insights?

The use of these three variables together determines the effectiveness of the individual learning process. (3) Next to these three internal psychological processes of acquisition and elaboration, also the external process between the trainee and his/her social, cultural and material environment form the learning experience.

Actually looking at it this way, learning includes three dimensions, namely the cognitive dimension of knowledge and skills, the psychodynamic dimension of motivation and emotions and the social dimension of communication and cooperation. The cognitive dimension, described as knowledge and skills, builds up the understanding and develops the meaning for the trainee. The psychodynamic dimension is the dimension of mental energy, motivation and emotions, and builds up the identity of a trainee. The social dimension is the dimension of external participation, communication and cooperation, and builds up the social character of the trainee. (4) Competences are built up this way as well.

2.2 Learning in the context of DRIVER+

Based on the fact that the TM’s trainees are adults and professional practitioners, the TM working group has identified eight elements that should be taken into account when organising TGM training activities to reach the objective of Trial organizers and other stakeholders proficient in using the TGM and supportive tools well:

- **Active learning**- the methods used are activating the cognitive processes of the trainee, it is not just passing information but also triggering actions.
- **Trainee centeredness**- the trainee is responsible for his/her own learning and the learning environment as well as methods are supporting that.
- **Contextual learning**- the training sessions need to present information in a way that trainees are able to construct meaning based on their own experiences and can relate it to upcoming challenges like Trials.
- **Learning from each other resulting in a learning community**- it is vital that groups from different Trials share their experiences in a social-constructive way. That is also important in terms of sustainability and networking after the end of the project.
- **Future oriented learning, related to CM in Europe**- the way learning is targeted should go wider than specific Trials, as the project’s objectives are not only to run 4 Trials, but also that project-partners and external organizations can prepare, run and evaluate other Trials outside the project, using the methodologies, tools and knowledge created/gained from the project.

- **Supporting self-directed continuous learning-** trainees are given further guidance if they wish to go deeper (e.g. complimentary materials).
- **Competency based learning-** in the end all that matters is if the trainees are able to demonstrate what they have learned as a combination of knowledge, skills and values.
- **Learning based on research and providing insights into research-** as stated before, evidently there is more research needed in terms of innovation management in CM practitioner organisations (i.e. public sector institutes). The Training Module should encourage and support these innovation initiatives.

These eight characteristics form a first set of generic requirements for the TM. Further content-specific requirements must flow from a Training Needs Analysis (TNA) amongst both trainees and TGM experts, of which the outcomes are described in section 4.

2.3 The issue of future trainees not knowing what they do not know

There is however one issue with asking future trainees what they think they need to learn: as they are not yet trained and therefore they cannot know on which topics they need training. Noel Burch (5) describes the four stages of competency development as follows:

- **Unconscious Incompetence**
The individual does not understand or know how to do something and does not necessarily recognize the deficit. They may deny the usefulness of the skill. The individual must recognize his/her own incompetence and the value of the new skill, before moving on to the next stage. The length of time an individual spends in this stage depends on the strength of the stimulus to learn.
- **Conscious Incompetence**
Though the individual does not understand or know how to do something, they recognize the deficit, as well as the value of a new skill in addressing the deficit. The making of mistakes can be integral to the learning process at this stage.
- **Conscious Competence**
The individual understands or knows how to do something. However, demonstrating the skill or knowledge requires concentration. It may be broken down into steps and there is heavy conscious involvement in executing the new skill.
- **Unconscious Competence**
The individual has had so much practice with a skill that it has become "second nature" and can be performed easily. As a result, the skill can be performed while executing another task. The individual may be able to teach it to others, depending upon how and when it was learned.

It can thus not be expected that a TNA amongst trainees reveals all the requirements for the TM. Therefore, expanding the TNA to also request feedback and needs from TGM experts is equally important.

3. Process followed to design the Training Module

Designing the TM is based on the theory and context of learning as explained in the previous section and on the high-over objective of the TM, as stated in the DRIVER+ Description of Work: provide training to primarily potential Trial organizers and secondary to other Trial stakeholders in how to apply the TGM and supportive tools most effectively. In designing the TM, the TM working group has followed the process described below.

1. **Training needs analysis (TNA)** – analysis of the TGM contents that need to be transferred in training content, a survey amongst Trial committee members (i.e. project-internal Trial organizers) and collecting experiences from TGM consultancy efforts (i.e. methodological support to the Trial committees). The results of this analysis are provided in section 4.
2. **Overall design of the TM and splitting the contents in achievable sessions** – as all content about the TGM and supportive tools is too much for one training session, it needs to be split up in several sessions. This overall design of the TM is explained in section 5.1.
3. **Decide on delivery method(s) of the TM in general and per session** – as nowadays different methods for facilitating learning are available (e.g. e-learning and/or interactive manuals and/or face-to-face instruction) and different people prefer different styles of learning (6), it is crucial that per session a well informed choice is made which delivery method(s) is/are chosen per (part of a) session. The outcome of this step is also described in section 5.1.
4. **Detailing each session** – each session, as identified in the previous step, is further detailed. These are described in sections 5.3 - 5.8.
5. **Setting up a schedule for the development and delivery of the actual training contents** – for each session it is determined when and by whom it will be created and delivered within each version of the TM. This step includes a feasibility check and its outputs can be found in section 6.

Especially steps 3-5 were executed in an iterative order, as defining the contents, creating the foundations of them and the delivery methods and moments of the entire TM are highly interdependent. Step 2, being the overall design and splitting of the contents in sessions, was critically reviewed and if needed slightly adjusted throughout the detail design of each session. This document provides a far more serial presentation of the design outcomes, than the process followed in reality to come to these outcomes.

4. Training Needs Analyses

In order to have the TM meeting the objectives as described in the introduction, a Training Needs Analysis (TNA) has been conducted to collect information on which the design of the TM can be based. This TNA is consisting of two main parts: an online survey conducted between 01/02/2018 – 04/04/2018 and the experiences collected by the TGM support team. These will be further described in sections 4.1 - 4.4 and 4.5 respectively.

TNA is mostly used when there is a need to identify the gap between the current competence and knowledge of a novice trainee and the state the competence/knowledge must be after finishing the training course. This is normally the first stage in the training course development and is also a part of the training process itself. It will help to determine if training will indeed address the problems which have been identified. TNA looks at each aspect of an operational domain so that the initial skills, concepts and attitudes of the human elements of a system can be effectively identified and appropriate training can be specified. (7) Since the TGM is a new methodology to be introduced to crises management practitioners, a new training need is established. Therefore, the TNA should support the TM's design by identifying trainee's previous experiences, knowledge and skills and bridging the gap what kind of new competencies are needed in order to apply the TGM and the supportive tools proficiently.

4.1 Set-up of the online survey

There are many methods to carry out TNA. All of them are targeting identification of training requirements and the most cost-effective means of meeting those requirements. One of the systems is called a SAT model (system approach to training) which has been influential and widely used in the training world for more than 50 years. According to Romazowski, the system includes the following stages (8):

1. Identify training needs: who needs training and what do they need to learn?
2. Taking in account learning theory: how do people learn, how is the learning organized and which design can meet the training needs?
3. Assess if the training has met the needs: did the training result in a (positive) change in performance?
4. Amendments to the training: changes when needed based on (partly) redoing stages 1 or 2.

TNA is targeting primarily the first two stages. The latter two stages are applied after the (first round of) training itself.

To gather information from the Trial committee members (i.e. potential trainees), a semi-structured electronic, online survey was established via the Limesurvey platform. This digital platform provided an infrastructure to reach simultaneously all the TM target groups and to reach them all in time. It is also experienced as very convenient for the responders, because they could provide their input when they had time available and it is also more environmental friendly than other survey methods, which often require travelling. Electronic survey platforms also are more practical in terms of data gathering and presentation. The survey's questions and all full answers are included in Annexes 2 and 3.

The online survey had 5 different content sections:

1. Responder's background and role within the Trials.
2. Professional competencies, including exercise design.
3. Expectations towards DRIVER+ Training Module (content).
4. Expectations towards learning preferences (methods).
5. General expectations and recommendations towards training development.

These sections were chosen based on already described approaches: active learning, trainee centeredness, contextual learning, self-directed and competency based learning. All those 5 sections are matching the SAT model described by Romazowski. (8)

The survey structure and content was worked out by three persons during the period 15/02/2018 – 01/03/2018. The structure of the survey contains different kinds of question types depending of the nature of information needed. There is a mixture of open-ended questions and Likert type scaling with possibilities for additional commenting. The survey was tested in a group of five persons and improvements (like

adjustment of scaling) were completed. The test included assessment criteria to check whether the questions were understandable and regarding the user-friendliness of the survey. After these tests, several amendments were made (e.g. structure and time calculation reduced to 15 minutes to fill up the survey). On 15/03/2018, the survey was sent out to the four Trial leaders with the request to distribute it amongst their committees (i.e. the trainee target groups), with a submission period of 14 working days. Two reminders were sent to the target groups. The first results were introduced during the TM development meeting held in Tallinn 17-18/04/2018.

4.2 Responder background data

The overall response rate was 13 persons (9 males, 4 females) and is depicted per Trial in Figure 4.1. The maximum approximate response rate should have been 48, which concludes to a response rate of 27%. Some of the persons might have double roles and some of the Trials had not invited the full committee to participate.

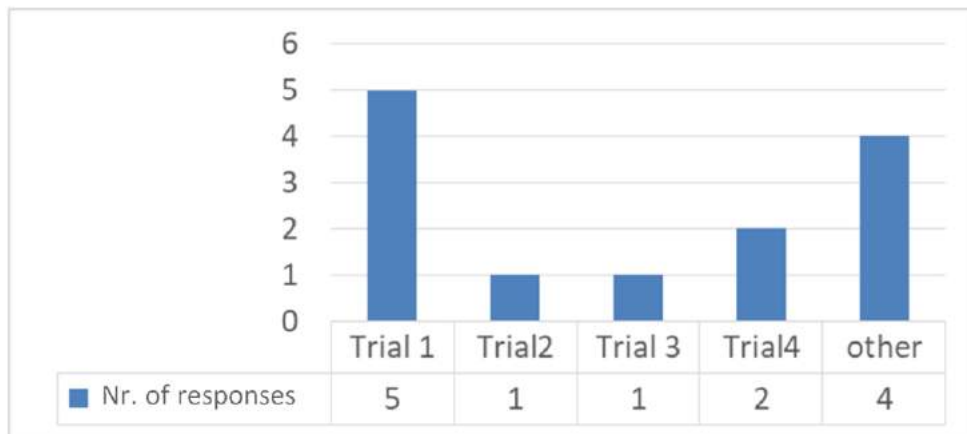


Figure 4.1: Amount of responses per Trial committee

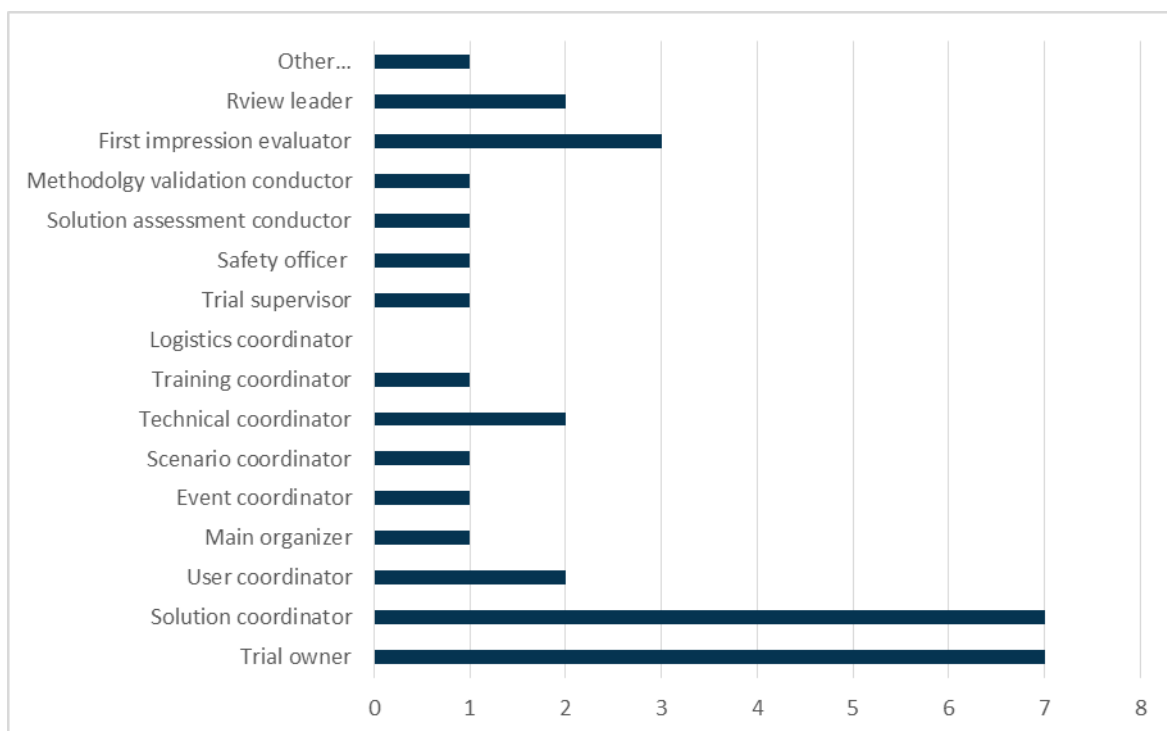


Figure 4.2: Division of roles in Trials and response rate

Figure 4.2 demonstrates the spread of different roles as defined in the TAP within different Trials. Note that the survey's question allowed multiple roles to be selected. This clearly indicates several persons have

multiple roles, which means that their training need is relatively higher, while some others might need only basic or single topic focussed instructions.

To have more insight in the background and expertise of the responders, a special question was asked to determine their previous experiences (see Figure 4.3). It impacts the training in two ways:

1. Having a long-time experience in exercising and largescale trainings would impact the understanding of the difference between Trials and exercises. At the same time, these experiences support the scenario design and logistical preparations.
2. Too less experience would acquire establishing wider understanding first. However, this most likely depends on the role assigned.

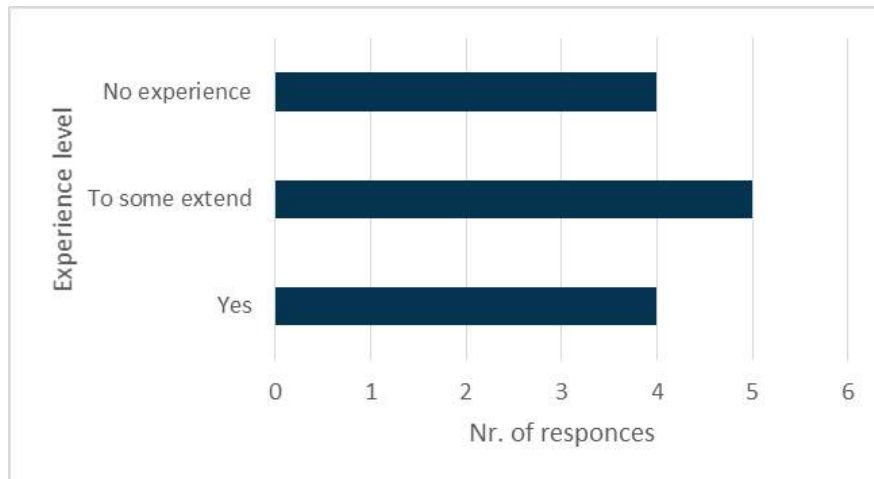


Figure 4.3: Experience in running exercises

As experience, responders mentioned to other large scale FP7-projects (e.g. EDEN, PRACTCE and CARPATHEX) as well as experiences from the first phase of DRIVER (3 nominations). Amongst the responders were two with experience as exercise director connected to civil protection and/or crises management. 4 persons have participated as organizers of large scale exercises at national level. There is also a variety of methods and environments used in mentioned exercises: table top (TTX), virtual reality, field tests and more. The full responses can be found in Annex 3.

Conclusions: The achieved response rate is low, very much Trial 1 focussed (see Figure 4.1) and therefore potentially not representative for all Trial committee members. However, the survey does provide useful input for the TM design, because during the survey time-period specifically Trial 1 was furthest of all committees in preparation of their Trial. As a result, specifically the Trial 1 committee members already had most experience with the TGM and were thus most conscious about deficits in their knowledge about the TGM and supportive tools (i.e. conscious incompetence, as explained in section 2.3).

9 out of 13 responders have significant experience in designing, planning, executing and assessing (large) exercises (see also Figure 4.3). But since the response rate was highest from Trial 1, this cannot be concluded for all Trial committees. However, there are reasons to believe that all Trial committees have at least a similar competency level (background of participating organizations), as all committees have two or more senior practitioners in their midst. The organisational aspects of a Trial which overlap with an exercise therefore do not have to be trained by the TM or not in full detail (e.g. scenario design).

However, since the concept of a Trial differs from that of traditional exercises and because of the (potential) unconscious incompetence of future trainees as explained in section 2.3, it can be concluded that there were a Trial differs from an exercise, these must be the focal points of the TM (e.g. data collection and evaluation methods).

4.3 Knowledge, skills and competencies the TM should include

The responders were asked to provide their personal expectations towards TGM training within DRIVER+ (content, information, and skills). Free text format was given to express their general thoughts and needs. This section provides a conclusive summarization of the responses, which can be divided in to two categories:

- **General competencies:** theoretical framework and competencies which are not directly linked to Trials but are essential to implement certain actions. Usually those kinds of competencies are acquired via academic education or professional experience for example: social and communicative skills, digital competencies, research related competencies, et cetera. In the survey these were expressed in a following way (examples):
 - “We need to know more evaluation and assessment methods which support CM”.
 - “Research question formulation, data analyses methods- how to do that?”
 - “Overall understanding of the TGM”.
- **Specific competencies:** instrumental and/or practical, which are directly linked to the application of the TGM and/or the supportive tools. Training this type of competence needs a more instructive and practical approach and the content is very much DRIVER+ project specific. Some examples from responders:
 - “Practical utilization of 6-step approach of TGM”.
 - “Detailed Information about the GT and methodology. How to work with it and how to use it? What is the relationship with the Trials? What must be considered by the Trials?”.
 - "Influence of the Methodology on the Trial execution, after the Trial design (6-Steps)".

Conclusions: 3 out of 15 (20%) unique responses are referring to general competencies and 12 (80%) to specific competencies. There is no definite line between those two competencies, but it can be concluded that the tendency is toward the TM to focus on those topics new and specific for DRIVER+: the TGM and the tools, and not towards more generic professional/academic competencies like for example critical experiment design, data evaluation or how to best conduct interviews. Because the TM should focus most on specific competencies, it lends itself best for practical and instructive training methods.

Referring to Burch’s competency model (5), mentioned earlier in this section, trainees are not always aware or recognize the deficit of learning. Therefore the TM working group cannot rely on responders input only, but it should be supported by experiences of TGM developers, feedback from the methodology support to Trials, lessons identified so far from Trials 1 and 2 and feedback from education/training specialists.

4.4 Methodological preferences and expectations per TGM phase

The next question in the online survey was targeting the methodological preferences or the modes of delivery of the trainings, in which responders should highlight their preferred method from a given selection. The responses should indicate if self-directed learning, trainee centred and active learning are to be expected from the participants or that their preferences indicate more traditional approaches (i.e. teacher centred, passive learning). The results are summarized in Figure 4.4.

The last section of the survey addressed the specialised expectations from participants and where they thought they would experience most difficulties in applying the TGM. It requested feedback on difficulties foreseen in the 3 phases of a Trial: preparation, execution and evaluation. Table 4.1 summarizes the responses.

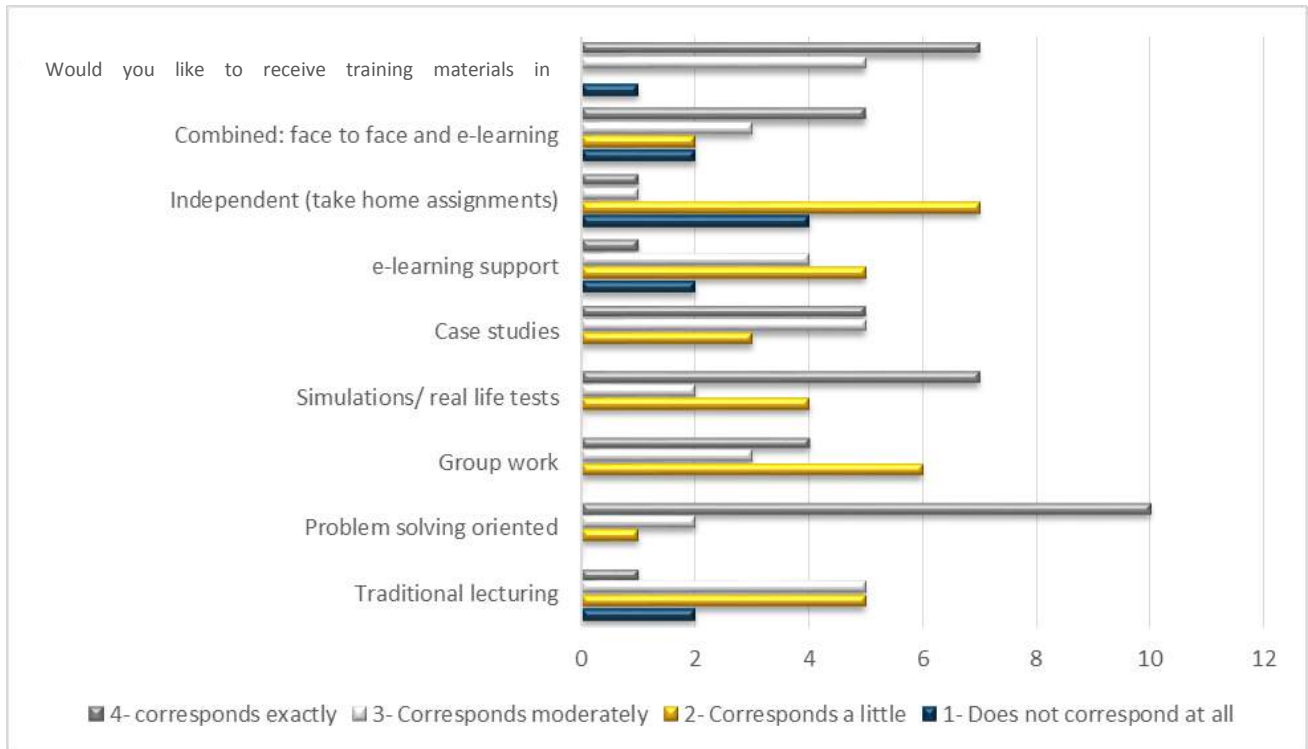


Figure 4.4: Method preferences

Table 4.1: Responder’s training expectations towards phases in Trials

General Comments: what are the most difficult phases?
<ol style="list-style-type: none"> 1. Support is needed to all phases (4. responses). 2. Evaluation (3. responses). 3. Preparation (4. responses). 4. Execution (4. Responses).
Expectations on the Preparation phase
<ol style="list-style-type: none"> 1. Defining the KPIs for certain solutions. 2. 3-dimencison evaluation (Trial, CM, solutions) how to define KPIs for each dimension to be sure. 3. That they are corresponding to research questions. 4. Technical testbed implementation (for the platform colleagues in VALABRE), scenario.
Expectations on the Execution phase
<ol style="list-style-type: none"> 1. What methods to use to collect data? 2. Coordination and Communication. 3. Methods, techniques and tools for evaluation of solutions during the dr2 and Trial. 4. KPIs - examples, definitions, how to collect data, measure and record them how to ensure objectivity of measured KPIs?
Expectations on the Evaluation phase
<ol style="list-style-type: none"> 1. How to “transfer” results of evaluation from collected data (KPI, quantitative, qualitative data) to each dimension of evaluation (especially CM), then to research questions answers. 2. What and how should be measured during DR1, DR2 and Trial itself and what should be the gaps closing aspect.

Conclusions: resulting from Figure 4.4, one can distinguish some inconsistencies. On the one hand there are indications that self-directed learning is not favoured in some aspects. For example, 11 people would rather not have taken home assignments, which refer to independent learning together with full e-learning courses (excluding contact, face-to-face seminars e.g.). Traditional lecturing is also not favoured, since 7 persons out of 13 indicate this as not their first preference. At the same time, methods like group work, problem oriented assignments and simulations are methods which correspond positively to responder's expectations. It can be concluded that a combination of various methods would be the best fit in this situation. Combination of digital learning solutions and face-to-face seminar/workshop style would match the responder's expectations the most. The digital or e-learning support should also include trainee activation methods.

4.5 Training Needs based on the TGM Support activities

The TNA is complemented by reporting the experienced training needs from a TGM expert point-of-view. This is facilitated by the TGM-team that is logging the needed support in the so called "TGM support diary". In the following sub-section, the diary itself is introduced followed by a first analysis of the experiences from methodology support to Trials 1 and 2².

One important source for the identification of which elements of the TGM require dedicated training sessions are the experiences from the TGM support activities. Each Trial committee contains one representative of the TGM Subproject who supports the Trial design, execution and analysis from the methodological perspective. To document and systemize the support needs, a specific support diary was developed. Every relevant support action is documented in a structured way containing mainly the following criteria:

- Initiator (i.e. role of the person/organization requesting support) and cause of request.
- Type of support communication (e.g. workshop, email exchange, etc.).
- Related TGM areas (e.g. formulate a research question) and specific support needs (e.g. relation between CM gaps and the research questions).
- Main support results (e.g. support in identifying a relation) and/or follow-up actions (e.g. link to similar cases).
- Required resources (number of involved TGM supporter, estimated duration, additional tools like software).
- General data (date, Trial number, etc.).

A first analysis of the TGM support diary shows that the kind of support can be grouped. Regarding time the most support was needed so far in the phases "setting up the Trial context" (step 0), "formulate data collection plan" and "formulate evaluation approach and metrics" (6s-approach). It can be anticipated that the analysis of the Trial results, currently ongoing for Trial 1, will also require major support activities.

Regarding step 0, the development of a "baseline" (depicting the as-is-process surrounding the identified gaps) of a potential Trial turns out to be a very time-consuming and challenging step. The mapping of the as-is-processes was so far not done by the Trial owner, but – even after an introduction and joint modelling – the detailed process models could only be realized by taking over this task by the TGM support itself. It is of high importance to achieve an as detailed as necessary view on which CM processes will be part of the envisioned Trial. This step determines the later to be defined data collection plan and the evaluation approach. Hence, mistakes at this stage might cause fundamental cascades for the further Trial development, execution and analysis. From this baseline the innovation-line is derived – the to-be-processes trialled. The rationale is to identify relevant metrics by comparing the two processes and realizing where the innovations create which kind of performance-related changes. Training in modelling techniques and tools could ease the process of creating base- and innovation-line significantly.

² And in lesser extend form support to Trials 3 and 4, as activities for preparing these Trials are far less advanced at the moment of writing this deliverable.

Another challenge has been identified regarding the differentiation between the three DRIVER+ performance measurement dimensions. Potential Trial set-ups seem to have been existing before a clear gap analysis was done. The crisis management dimension gets neglected since many project partners are focusing on the innovative solutions. In consequence, the Trial committee tends to follow rather a technology-driven Trial design, instead of a practitioner-driven approach. To deal with this phenomenon, the specification of what should be focused (relevant gaps in the specific Trial context) under which side restrictions (Trial dimension) with which potential expectations (solution dimension) has to be pointed out more clearly. Since this step highly affects the Trial scenario design, a clear documentation of the three phases is needed. Hence, explanations and examples of the performance measurement dimensions seem to be an important input for the training of the TGM.

Looking at the preparation phase, the application of the six-step approach, an overall understanding of the iterative and co-creative process was identified as critical. The questions from the participants were often related to the iterative nature of the TGM. Its relation to the solution integration to the Test-bed was challenging especially to solution and Test-bed coordinators. For the training sessions, a clarification of which aspects, tasks and time constraints have to be considered and will mesh together like the teeth of gearing wheels to enable a smooth Trial planning.

A special devotion must be given to Ethical, Legal and Social Issues (ELSI) during the design, execution and analysis of DRIVER+ Trials. However, they were often neglected due to missing awareness and knowledge. The need to consider ELSI related issues was mainly initiated by the TGM team. One example is the data to be considered when trialling social media in emergency management (SMEM) related solutions, both with legacy as well as new solutions. In order to appropriately address ELSI questions specific or case-related support was given by the DRIVER+ consortium members of the Norwegian Peace Research Institute Oslo (PRIO). In conclusion, a dedicated training session on how to generally address the ELSI dimension must be considered as crucial input for an effective TGM training.

Although there was no request for support, it was identified by the TGM-team that training on the execution is needed as well. In order to enable a pragmatic yet systematic Trial, proper awareness for the interactions of observers and Trial participants has to be raised, as well as the interaction of solution providers and Trial participants. Furthermore, it has to be stressed how challenges can be addressed without compromising the scientific approach. If a solution does not perform as planned or data gets lost, the Trial committee needs to be aware of potential consequences. Because of the high-quality requirements regarding the conclusions on the data collected during the Trials, the involved stakeholders need to be prepared for the rigor data quality check in the evaluation phase, probably leading to the exclusion of several Trial elements. Questions on how to deal with breakups because of a failure in the Test-bed or solutions might require on the fly Trial adjustments, corrective actions and/or repetitions as well as identification of major limitations for the evaluation phase. Trial participants might be prepared for potential actions of such unexpected events. Experiences from past DRIVER experiments as well as the DRIVER+ Trials could offer useful inputs for potential training sessions.

Regarding the evaluation of Trials another important topic was identified in the area of the identification of observer questionnaires as well as the identification and preparation of the involved observers. Several support actions were needed with regards to the proper phrasing of the observer questionnaires. The formulation of questions and answer types need to carefully reflect requirements of qualitative research methods. Biases or suggestive questions need to be avoided, while open questions should allow gaining the specific expert knowledge of involved observers. In addition, the application of the developed DRIVER+ Lessons Learned Framework (LLF) need to be introduced in order to allow conclusions of the Trials which are going beyond the specific investigation of the performance of trialled solutions. Especially the LLF should be picked up for a dedicated TGM training session, while the general observation guidelines still require some learnings from the intermediate experiences (esp. related to Trial 1).

The TGM support diary is continuously growing since currently support is given to almost three Trials at the same time. Thus, the presented conclusions are continuously updated. However, the results offer already quite specific needs for the design of TGM training needs. The upcoming update will also contain a reflection of the observed effects of TGM trainings on the support activities.

4.6 Recommendations for TM design

This section describes the recommendations gathered from the TNA and the TM working group meeting held in Tallinn 17-18/04/2018, as well as experiences gained from the first Trials and their TGM support needs. The conclusions are used and considered as much as possible in the design of the TM (refer to section 5 about documentation of the TM design).

1. The design of the TM should consider the project's long term goals, being that TGM-trained practitioners can organize Trials themselves, also outside and after the DRIVER+ project has ended. This aspect is connected to the sustainability of the project. If the training remains only to instruction level - meaning that trainees receive only knowledge how the TAP is to be filled, instead of a found understanding of the aims of the TGM and how each step supports the other – the trainees can never be self-supportive in preparing, executing and evaluating a Trial. It is important to stress out for what, why and who the TGM is useful and its position within the organizational innovation system process. Techniques in defining the Trial context building the foundation of a Trial, including the visualization of the baseline and probably the deduction of a to-be scenario, need to be trained in a way that CM practitioners can apply them without the involvement of “outsiders”. This is a key task to ensure practitioner-driven, self-supportive Trial development.
2. Different roles within the Trial committees may have different needs, but the general awareness should be explained to every role.
3. TM should cover both informational and theoretical material, explain the TGM overall and in detail and should answer practical, Trial-related questions.
4. The reality of the organization of a Trial shows the variety of components that must be considered to create a functioning set-up. This includes considering the overlaps between the TGM and the developed tools and test-bed components (e.g. Guidance Tool, Portfolio of Solutions, observer support tool, or after action review component) as well as the solution integration procedure. Being a closely linked system, all steps within the TM need to be aligned and future users must be aware of the links and time constraints they bring. Furthermore, the tools should be introduced and training on them is needed.
5. Introduction of the DRIVER+ performance measurement dimensions need to be introduced, enriched through specific examples for each dimension (Trial, CM, solution) and level (from objectives to KPIs). A clear differentiation between those elements allows a proper definition on what needs to be measured and how the measurement dimensions are interrelated.
6. In order to enable the iterative and co-creative nature of the Trial design, the 6-step approach has to be explained including its interrelations. Besides, appropriate participative methods have to be presented and explained to the participants.
7. A dedicated training session on ELSI related questions need to be introduced covering both general guidelines and specific examples of comparable events (like former experiments or comparable Trial-like events).
8. A clear understanding of the scientific standards of an evaluation has to be taught. As most practitioners are not used to these rigor approaches, the importance of this has to be clearly stated.
9. The analysis capabilities need to be further elaborated in order to ensure significant conclusions of DRIVER+ Trials. Following the intermediate experiences, the need of a better preparation of observations and identification of observers is needed as well as the introduction of the DRIVER+ LLF.

4.7 Conclusions

Apart from these recommendations, which are foreseen they can be included well in the TM design, some extra comments are to be made. First, it should be further elaborated in how far TGM training is able to address the identified needs to design, execute and evaluate DRIVER+ Trials. Based on the current experiences it might be concluded that a proper TGM application requires more than just a generic training and a supportive information system. The TGM support diary has shown that different case-specific requests require an interaction with a well-balanced network of domain experts offering different kind of support activities.

Secondly, as stated before, the TNA's online survey is not and should not be the only basis for TM design, since the response rate was not representative enough. The TGM model itself is relatively new to organizations taking part in DRIVER+ and the model itself is still under development in terms of appliance (i.e. every Trial will provide feedback to the TGM and thus provide improvement possibilities). In this situation the best fit solution could be to apply stages 3 and 4 from the SAT model mentioned in the beginning of this chapter: 3. Assess if the training has met the needs and 4. Amend it where needed.

Using the information currently available at both the TGM support team and the TM working group, at least first versions of the TM should be launched as soon as possible and applied in the committees of Trials 2, 3 and 4. Then, feedback from these trainees and from the instructors, as well as from Trial evaluators is the source for improvement of the TM, until the best fit solution is found.

5. Set-up of the Training Module: training goals, objectives and outcomes

Based on the results of the TNA and taking the DRIVER+ objectives into account, the learning outcomes need to be defined in detail to ensure the proper explanation and implementation of the TGM and supportive tools. To come up with this overall, consistent and detailed design of the TM, the TM working group has come together at the EASS academy in Tallinn, Estonia (17-18/04/2018), followed by further virtual meetings.

This section first provides the overall TM design, explaining how the content to be learned is split up in 7 sessions and how all this content is delivered to the trainees. Note that session 7 will only be delivered in the future final version only. This overall design is followed by the detail design of sessions 1-6, documented using a standardized learning template as explained in section 5.2.

5.1 Overall TM design

Looking at the TNA results and taking the practical and sustainability objectives of the DRIVER+ project in account, the TM should be aimed at two types of target audiences:

1. Primary: Trial organizers, meaning for the project-internal Trials all Trial committee members.
2. Secondary: Solution providers (i.e. project-internal and -external), technical developers of these solution providers and other stakeholders of Trials. For them, mostly sessions 1 and 2 are of interest and for technicians also session 6.4.

5.1.1 Blended approach: e-learning and contact-phase

Given the results of the TNA, a 'blended approach' of the TM is appropriate: a mix of e-learning (i.e. videos, audio lectures, digital presentations, and such mostly suited for informative and instructive information) and face-to-face hands-on training targeted more at specific Trial committees (i.e. traditional classroom lectures, case studies, small group assignments and going deeper into each specific Trial). This follows the TNA survey in which people ask both for self-study material which they can complete in their own time, as well as face-to-face meetings with instructors and fellow Trial organisers to be able to dive deeper in (Trial-specific) topics and questions. The nature of the content also lends itself partly to e-learning (e.g. explain it) and instructor-led moments (e.g. a coached assignment in applying a specific step of the TGM).

It has been decided to use EASS's Moodle platform to publish the TM's e-learning parts, because this platform is already available at a project-partner, other partners have experience with it and it will remain available after the project, since it is not only implemented for the project's content but also used massively to host all of Estonia's security sciences' e-learning content. It is therefore seen as a feasible (i.e. is already available within the project), budget-neutral (i.e. no extra/new licenses to be paid) and durable platform (i.e. also available at EASS after project ending).

In first instance, access to the TM's e-learning will be limited to DRIVER+ project Trial committee members only, via an account creation by EASS. It will be discussed in SP95 what process to follow for TM access requests by externals: via controlled account creation or open account creation and thus access on the website for participants themselves.

The e-learning phase will be followed by a contact-phase, as trainees first must acquire the knowledge (i.e. from e-learning) and then apply it (i.e. by small assignments/tests inside the e-learning and mostly in assignments during the contact-phase). For this contact-phase, a pool of instructors must be set-up, providing all expertise to cover all topics and containing enough people to be able to deliver the contact-phase within a reasonable timeframe throughout Europe.

5.1.2 Split in various sessions

Taking the contents of the TGM into account (refer to (2) for a complete description), the results from the TNA, experiences with methodological support to Trial committees and the amount of support tools to be

explained, including the interdependencies between these, the TM will be split up in 6 sessions. A list of the sessions and their main learning objectives is documented in Table 5.1. One might note that some learning outcomes are overlapping (i.e. occurring in multiple sessions). This is done deliberately to use the power of repetition for those topics most important to be trained.

Table 5.1: Sessions and learning outcomes

Session	Main learning outcomes (the trainee can...)
Session 1: Introduction to Trials and the TGM.	<ol style="list-style-type: none"> 1. Know what the DRIVER+ project is about, specifically what Trials are and their difference to exercises. 2. Understand the reasons of existence of the TGM and why it should be applied in all Trials. 3. Ensure utilization, customization and implementation of the TGM. 4. Know about the existence of the Guidance Tool (GT), Portfolio of Solutions (PoS), Trial Action Plan (TAP) and Test-bed and their aims.
Session 2: The context of Trials – Why, Who and What?	<ol style="list-style-type: none"> 1. Understand the start-point to consider running a Trial can be a problem or a solution. 2. Understand the differences between exercises and Trials. 3. Analyse the current CM (in)capabilities and identify and select gaps to do a Trial. 4. Identify roles & responsibilities of the Trial committee and arrange the required resources and people involved. 5. Compose the overall Trial setting and explain it to colleagues.
Session 3: Preparation of the Trial.	<ol style="list-style-type: none"> 1. Understand the 6-step approach and its procedure. 2. Discover the Knowledge-Base and its structure. 3. Contrast a gap as the difference between current CM capabilities and necessary capabilities. 4. Infer SMART objectives for three dimensions: Trial, CM, and Solution. 5. Understand the importance of measuring Trials in a robust way. 6. Basic understanding of different data analysis methods. 7. Understand the importance of ethical, legal and social issues (ELSI) and has a basic understanding on how to address them.
Session 4: Execution-phase.	<ol style="list-style-type: none"> 1. Implement the execution process by designing and conducting subsequent Dry Runs and readiness reviews. 2. Communicate execution plan with colleagues by utilising the Trial Action Plan. 3. Assess the required readiness level for a proper execution of Dry Runs and Trial. 4. Execute the Trial.
Session 5: Evaluation phase.	<ol style="list-style-type: none"> 1. Understand the importance and the purpose of the evaluation and can apply it during the Trial evaluation. 2. Perform a critical data analysis and review on the entire Trial and its outcomes. 3. Create a good Trial concluding report.
Session 6: Supportive tools.	<ol style="list-style-type: none"> 1. Use the Guidance Tool (GT). 2. Use the Portfolio of Solutions (PoS). 3. Fill in the Trial Action Plan (TAP) correctly. 4. Know what the Test-bed can offer and select and use those components needed.

Session	Main learning outcomes (the trainee can...)
<i>Session 7: Gap stone – further elaborations and supportive materials.</i>	<i>This session will be defined and created later on in TM - version 2.</i>

The rationale to split the TM in these 6 sessions is the following:

- The three phases of the TGM each get their own session (i.e. sessions 3, 4, and 5).
- The introduction in the concept of a Trial and the TGM is split in a generic introduction aimed at creating (more) interest in the TGM and the DRIVER+ project and to facilitate expectation management of the TM (i.e. session 1, with for example on who the TM is aimed) and a more in-depth session about the context of Trials (i.e. session 2).
- The supportive tools get their own session (i.e. session 6), as these tools are used or are at least to be considered in every of the 3 phases and can thus not be explained within the session of one of these phases. Because there are in fact four tools, session 6 is split in 4 sub-sessions; one for every tool. This provides the possibility for each of the other sessions (i.e. 1-5) to link to a tool-specific sub-session if needed.

It is foreseen that as the project progresses and experience with organizing Trials grows, more information useful for Trial organizers is found, which is not directly part of the TGM but is useful to explain/instruct. For this purpose, session 7 will be added to version 2 of the TM.

The order of the seven sessions is chosen as such that a trainee progresses from more general topics to specific ones. Every session should consist of different parts. Especially in e-learning, session A can link to parts of session B and vice versa. Therefore, every part can and should be separately accessible. This separate accessibility is mainly required because while for Trial organizers all sessions are important, for technical developers and other Trial stakeholders (e.g. CM policy makers) only some topics and thus a subset of learning outcomes are applicable.

In the e-learning, Sessions 1 and 2 must be completed before the next sessions are accessible, as this assures that at least the basics of the TGM are explained. As mentioned in section 1, it is vital for the sustainability of the DRIVER+ project that the trainees are able to explain the TGM in their own words, use it and conduct Trials by themselves after DRIVER+ has ended. Moreover, externals should also be able to follow the TM and organize high-quality Trials themselves. The first two sessions are providing the general competences and wider scope which should be obligatory to all roles in a Trial.

When Session 2 is completed, the other sessions become accessible for trainees to go through them at their own pace, although order 3-4-5 is advised. Sessions 2-5 refer several times to the tools explained in session 6. Sessions 1-5 have been worked out according by using the course development template which is used in EU Border and coast guard agency Frontex, as further explained in section 5.2.

5.1.3 TM versions 1 and 2

Two versions of the TM will be made, as also originally stated in the DRIVER+ Description of Work. Next to these two versions of the entire TM, training and consultancy efforts about the TGM will be provided to Trials 1 and 2.

Version 1 - on request training/consulting for Trial 2

The first version of the TM will be delivered topic-based and in a consultative method (i.e. by the TGM support group of WP922, if needed assisted by other subject-matter experts). This decision is mainly due to the fact that preparations on Trial 2 have already started and are far progressed. Starting training from scratch for Trial 2 committee members therefore makes little sense. Lessons identified in Trial 1 are taken up in this version.

Version 2 – aimed at committee members of Trials 3 and 4

This version is aimed at assuring well-trained committee members for Trials 3 and 4. Although preparations of these Trials have already started, the delivery dates of Version 2 (i.e. e-learning on 01/10/2018 and

contact-phase at updated Workshop 0 on 5-8/11/2018) are chosen such that both TM content creation is feasible and that TM output can still be taken up in the design of Trials 3 and 4.

Final Version – sustainable project results for everyone to use

The TM's Final Version will consist of the training contents of Version 2, updated with lessons learned from all Trials and how Version 1 was received by committee members of Trials 3 and 4. Sections 6 and 7 explain in more detail how to make the Final Version a sustainable project result and what needs to be discussed and decided for this in WP954.

5.1.4 Other design decisions

During the Tallinn meeting, some other design decisions were taken, which are not yet reported. As already reported in the TNA conclusions in section 4.6, the TM will focus mostly on the preparation and evaluation phases, because it is these phases where Trials differ most from exercises and because most potential trainees have already an (elaborate) experience in executing exercises.

There will be no official assessments included in the TM, as this would reduce the experienced safety of the TM environment and would require an official educational institute to manage and administrate the TM and its contents, which in turn would reduce the sustainability chances of the TM after the DRIVER+ project. Some forms of self-assessment will be supported though.

The TM will not be used to fully explain the DRIVER+ project in detail, although this could be an expectation of especially externals. If the TM was elaborated to also be useful for explaining the DRIVER+ project entirely, it would become too large.

For ease of use, understanding and consistent practical context, the trainee will be guides through use of the TGM and the tools throughout all sessions by a user-story. This user-story is a storyline of a fictive Trial organizer, story-telling all the steps he/she takes to set-up his/her Trial. The user-story will be created for the TM, based on user-stories already created in WP922 (i.e. development of the TGM) and for external dissemination of the DRIVER+ project. It will thus not be created from scratched, but tweak to optimize it for training outcome.

5.2 Template for defining each session

To use a consistent, structured approach in defining each session in detail and to make sure every session is documented in the same level of detail, the TM working group has decided to use the learning template, as created and used by Frontex (i.e. European border and coastguard agency) (9) and in use by many law enforcement oriented training and education institutions (including EASS) which apply European Higher Education standard and Sectorial Qualification Framework for setting up learning content. The template includes relevant information and allows academic institutions to apply RPL process (Recognition of Prior Learning) if participants need to use the completed course. In other words: they can apply for ECTS points (European Academic Credit Transfer System) since the training matches the outcome/competency based approach. Because the TM also has to serve a European trainee population and because the template is proven to work well in setting up many different courses within EASS - also those less law enforcement related, but more fire service and/or crisis management related - it is seen fit as base for detailing out the design of every session within the TM.

The TM working group has slightly simplified this template, leaving out financial and Frontex organizational aspects as this information is not envisioned relevant within the DRIVER+ project and because it is decided to use the Moodle e-learning platform of EASS to publish the TM's e-learning parts. This simplified template is provided in sections 5.3 - 5.8. Terms used in these templates are defined in Table 5.2.

Table 5.2: Definitions used in the simplified Frontex learning template

Term in Frontex template	Definition for the TM
Entry requirements	What the trainee must know or must have completed, before the specific session can be started.
Target group	Type of trainees the session is primarily aimed at. This does not mean the session is of no use to others, but it is not specifically targeted on others.
Role involvement	The roles, as defined in the TAP, on which the session is primarily targeted.
ECTS	European Credit Transfer and Accumulation System (ECTS). ECTS credits are a standardized number to define the "volume of learning based on the defined learning outcomes and their associated workload" (10) for higher education across the European Union and other collaborating European countries.
EQF-level	European Qualifications Framework (EQF)-level. The EQF levels are used to relate national/local/sector-specific qualification levels to a European standard (11). In a simplified manner, one could state EQF-level 6 is equivalent to B.Sc.-level, EQF 7 to M.Sc.-level and EQF 8 to PhD-level.
Course Learning Strategy	This section describes how every topic within the session is delivered to the trainee. Following the TM set-up, this section is most times split in an e-learning part and a contact-phase part.

When filling the Frontex template per session, the TM working group decided to use Bloom's Taxonomy of measurable verbs (i.e. action verbs) (12) as much as possible. Bloom created a taxonomy of verbs (i.e. categories of verbs), where these verbs show a trainee's action, such as 'describe', 'apply' or 'point out'. The six lists of verbs are linked to Bloom's six definitions of learning types: acquiring Knowledge or Comprehension, or being able to apply, analyse, synthesize or evaluate the learned/trained/instructed contents (see also Figure 5.1).

Level	Definition	Sample verbs					Sample behaviors
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.	arrange define describe duplicate	identify label list match	memorize name order outline	recognize relate recall repeat	reproduce select state	The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.	explain summarize paraphrase describe illustrate classify	convert defend describe discuss distinguish estimate explain	express extend generalized give example(s) identify indicate	infer locate paraphrase predict Recognize	rewrite review select summarize translate	The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.	use compute solve demonstrate apply construct	apply change choose compute demonstrate discover dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will write an instructional objective for each level of Bloom's taxonomy.
ANALYSIS	Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question	analyze categorize compare contrast separate apply	change discover choose compute demonstrate dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will compare and contrast the cognitive and affective domains.
SYNTHESIS	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.	create design hypothesize invent develop arrange assemble	categorize collect combine comply compose construct create	design develop devise explain formulate generate plan	prepare rearrange reconstruct relate reorganize revise	rewrite set up summarize synthesize tell write	The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains.
EVALUATION	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	Judge Recommend Critique Justify Appraise Argue	Assess Attach Choose Compare Conclude Contrast	Defend Describe Discriminate Estimate Evaluate Explain	Judge Justify Interpret Relate Predict	Rate Select Summarize Support Value	The student will judge the effectiveness of writing objectives using Bloom's taxonomy.

Figure 5.1: Bloom’s Taxonomy Action Verbs (12)

These verbs are applied in setting the TM Session’s training objectives, by first defining in which type/level of learning the objective falls and then writing down the objective using a verb of Bloom’s Taxonomy fitting that type/level. By having the TM’s training objectives stated using these verbs, these objectives describe which trainee behaviour must be observable when the objective is sufficiently met (e.g. the trainee comprehends the 3 phases of the TGM when “the trainee can correctly describe the 3 phases of the TGM”). Therefore, using these verbs greatly supports defining the learning objectives in a measurable manner. By having measurable objectives, the TM working group can later on evaluate whether the TM works well enough to train potential Trial organizers and other stakeholders involved. Or in other words: when the objectives would not be measurable, it would be much harder to evaluate the TM’s effectiveness.

5.3 Session 1: Introduction to Trials and the TGM

Table 5.3: Learning template for session 1

<p>Session 1: Introduction <i>What is DRIVER+ - introduction to Trials and the Trial Guidance Methodology (TGM)</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: none. Target Group:</p> <ul style="list-style-type: none"> • CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level. • CM professionals and policymakers interested in the DRIVER+ project and/or Trials. • Potential solution providers/developers.

Session 1: Introduction <i>What is DRIVER+ - introduction to Trials and the Trial Guidance Methodology (TGM)</i>
Role involvement: Practitioners who are involved in preparation, execution and evaluation of Trials.
Constraints (Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)
Duration: 30min e-learning + 15min contact-phase group-work. Instructors: 1 TGM expert (can be someone who has run a D+ Trial before). Facilities: Moodle + contact phase location. Location: E-learning from home; contact-phase at classroom. Equipment: Computer with internet for e-learning; classroom with pens and paper / computer with text processing software. Level: EQF 6.
Learning outcomes
Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u> <ul style="list-style-type: none"> • The aims of the DRIVER+ project. • The existence of the TGM to guide and support preparing, executing and evaluating Trials. • The existence of the DRIVER+ website. • The topics of Training Module sessions 2-6. <u>Comprehension of:</u> <ul style="list-style-type: none"> • Distinguish a Trial from an exercise (i.e. assessment of solutions). • What is meant with a “solution” (i.e. a tool/procedure/process showing potential to improve/innovate Crisis Management). • The high-over roles of Trial organisers, solution providers and other potential Trial stakeholders. • The existence of and aims of the Portfolio of Solutions, Guidance Tool, Trial Action Plan and Test-bed.
Be <u>able</u> to:
Take <u>responsibility</u> for: <ul style="list-style-type: none"> • Managing own learning experience by using the Training Module (i.e. determine for your own role what session to follow in which order).
Course learning strategy
<u>E-Learning:</u> <ul style="list-style-type: none"> • Introduction in the DRIVER+ project. <ul style="list-style-type: none"> ○ Project-video with voiceover. • Distinguish a Trial from an exercise and explain the 2 potential starting points. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. • Introduction in types of Trial stakeholders (i.e. organizers and facilitators, policy makers, innovation managers, solution providers, developers and consultants). <ul style="list-style-type: none"> ○ Animated PPT with voiceover. • Introduction in the TGM. <ul style="list-style-type: none"> ○ Video of TGM expert/consultant. • Existence of websites, digital tools and their aims (project website, PoS, GT, Test-bed). <ul style="list-style-type: none"> ○ Animated PPT with voiceover. ○ Documentation with hyperlinks.

<p>Session 1: Introduction <i>What is DRIVER+ - introduction to Trials and the Trial Guidance Methodology (TGM)</i></p> <ul style="list-style-type: none"> • Table of Contents of Sessions 2-6. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. • DRIVER+ FAQ. <ul style="list-style-type: none"> ○ Quiz with short questions about definitions covered in Session 1. <p>Contact phase:</p> <ul style="list-style-type: none"> • Trainees are asked whether they have any outstanding questions about the introduction in the project, TGM and available websites and support tools.
--

5.4 Session 2: The context of Trials – Why, Who and What?

Table 5.4: Learning template for session 2

<p>Session 2: Trial context, need and gaps <i>Why do you do a Trial? By whom is it done? For what purposes?</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: Has completed session 1. Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level. Role involvement: Practitioners who are involved in preparation, execution and evaluation of Trials.</p>
<p>Constraints (Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)</p>
<p>Duration: 45min e-learning + 45min contact-phase group-work. Instructors: 1 TGM expert (can be someone who has run a Trial before). Facilities: Moodle + contact phase location. Location: E-learning from home; contact-phase at classroom. Equipment: Computer with internet for e-learning; classroom with pens and paper / computer with text processing software. Level: EQF 6.</p>
<p>Learning outcomes</p>
<p>Have a knowledge or understanding of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • CM functions taxonomy and how this can be matched to trainee’s own organisation CM (in)capabilities. • Know about the existence of the PoS. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Distinguish a Trial from an exercise. • Required Trial execution resources.
<p>Be able to: <u>Analysis:</u></p> <ul style="list-style-type: none"> • Point out and describe trainee’s own motivation to run a Trial (start from problem or solution). • Identify roles & responsibilities of committee. • Analyse the current CM (in)capabilities.

Session 2: Trial context, need and gaps*Why do you do a Trial? By whom is it done? For what purposes?*

- Identify and select gaps to do Trial on.

Synthesis

- Compose the overall Trial setting and explain it to colleagues.

Take responsibility for:

- Arranging the required resources and people involved.

Course learning strategyE-Learning:

- **Describe your motivation to run a Trial (start from problem or solution).**
Based on what's learned from the general introduction in Session 1, partly a recap.
 - Animated PPT with voiceover.
 - Examples for the two entry points (I have problem / I have interesting solution).
- **Distinguish a Trial from an exercise.**
This is partly a recap from Session 1.
 - Animated PPT with voiceover.
 - Open question (free text field) for own idea to run a Trial (later self-reflection).
- **Analyse the current CM capabilities.**
 - Video explaining CM functions concept, why to analyse and how to analyse.
- **Match your CM capabilities to CM functions taxonomy / Know about the PoS (→ Sessions 6.1 and 6.2).**
 - PPT on taxonomy.
 - Documentation.
- **Identify gaps.**
 - Animated PPT (student can read through every gap).
 - Open question on gaps: take own idea for Trial in account and select applicable gaps (or add free text new gap) and ask for at least 1 case example per selected gap.
- **Identify roles & responsibilities of committee.**
 - Animated PPT with voiceover on committee roles.
- **Indicate the required Trial execution resources.**
 - Animated PPT with voiceover covering location, hardware, software and subject matter experts (i.e. practitioners and experts on research methods).
- **Compose the overall Trial setting.**
 - Outro video summarizing session and next steps.
 - Existence of the TAP to start documenting all this (→ Session 6.3).

Contact phase:

- Trainees encouraged sharing their own ideas to do a Trial, as they filled in on the e-learning session.
- Group work on further elaborate 1 or 2 of these ideas into a first plan, covering:
 - Solution to Trial and/or problem to solve (problem(s) must be described, solutions optional).
 - Forming committee and roles of each person in this committee.
 - Listing required resources (location, hardware, software and subject matter experts).
- Discuss with instructor this initial Trial plan(s).

5.5 Session 3: Preparation of the Trial

Table 5.5: Learning template for session 3

Session 3: Preparation phase
<i>What are the steps and tasks needed to be carried out to design a Trial and who is involved in each stage?</i>
Target group and entry requirements
<p>Entry requirements: Has completed session 2.</p> <p>Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level.</p> <p>Role involvement: Practitioners who are involved in preparation of Trials (and potentially execution and evaluation).</p>
Constraints
(Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)
<p>Duration: e-learning: 4 times 90minutes + 2 days contact phase.</p> <p>Instructors: 2 TGM experts.</p> <p>Facilities: Moodle + contact phase location.</p> <p>Location: E-learning from home; contact-phase at classroom.</p> <p>Equipment: Computer with internet for e-learning; classroom with pens and paper / computer with text processing software.</p> <p>Level: EQF 6.</p>
Learning outcomes
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • The 6-step approach and its procedures. • Discover the Knowledge-Base and its structure. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Interpret SMART principles to define objectives. • Formulation of good research questions. • Understanding of different type of solutions and the impact of solutions on the CM dimensions. • Understand the concepts of the Trial dimension, CM dimension and Solution dimension.
<p>Be able to:</p> <p><u>Analysis:</u></p> <ul style="list-style-type: none"> • Contrast a CM gap as the difference between current CM capabilities and necessary capabilities. • Formulating the base-line, based on the CM gaps to resolve and the selected solutions. • Infer SMART objectives for three dimensions: Trial, CM and Solution. • Understand the importance of measuring Trials in a robust way. • Basic understanding of different data analysis methods and when to use which one. • Understanding the importance of KPIs and how to identify them. <p><u>Synthesis</u></p> <ul style="list-style-type: none"> • Choose roles and involvement of the stakeholders in the different phases of the Trial design. • Formulate the innovation-line, based on the base-line and the selected solutions.

Session 3: Preparation phase

What are the steps and tasks needed to be carried out to design a Trial and who is involved in each stage?

- Develop a realistic scenario based on: Trial context, gaps, questions and measurements.
- Define the required resources for setting-up a Trial.
- Define relevant KPIs.
- Formulate research questions.
- Visualize the results of the data analysis.
- Evaluate objectives, research questions and KPIs, based on certain criteria.
- Perform an effective search and select solutions from the PoS by selecting the right key words.

Take responsibility for:

- Manage the preparation of a Trial and guide Trial committee members in this task.

Course learning strategy**E-Learning:****1. Session: Introduction to Preparation Phase and Gap Understanding****Introduction of the main components from the Preparation Phase:**

- PPT with voiceover introducing the preparation as part of the user-story:
 - Objective of the preparation phase (as a summary for the whole module).
 - Tasks of this phase.
 - Brief overview on the Input and Output of each step.
 - Overview of who is responsible for each task and sub-tasks.

Defining a Gap: understanding the context with limited information:

- PPT with voiceover emphasizing:
 - Characteristics of the definition (what's included in a Gap).
 - Stakeholder involvement.
 - How to validate a gap.
- PPT with Examples on currently existing gaps (from past experiences).
- A virtual forum is open for “parking-lot” discussions or questions to be summarized in the group work.

Defining the Trial context

- One pager with the Trial context that refers to:
 - The “Who”, “What”, “Why” and “How”, namely roles, responsibilities, constraints of the participating organization(s) or the facilities of the organisations hosting the Trial.
 - Some examples to illustrate this.
 - The task to relate the Gaps to the Trial context by answering the clearly formulated “actions and required participation” from (2) p.49.

Sensitization to ethical, legal and social issues (ELSI)

- PPT with voiceover emphasizing:
 - What is ELSI and why do I have to care?
 - Where in my Trial preparation, execution and evaluation do I have to be aware of ELSI?
 - Where can I find information and help?
 - DRIVER+ Societal Impact Assessment (SIA) framework.

Session 3: Preparation phase

What are the steps and tasks needed to be carried out to design a Trial and who is involved in each stage?

- EU general data protection regulation (GDPR).
 - What is an NDA and why do I need this?

2. Session: The 6-Step Iterative Process

- Video/or animated voiced PTT on the iterative and co-creative 6-step process and its methodology of performing multiple linear iterations together with relevant actors. The importance of the “iterative” approach and how this can be done has to be stressed by giving examples (maybe following the user story).

Step 0

Recap of Session “Introduction to Preparation Phase and Gap Understanding” stressing gaps, Trial context, ELSI etc. in a short way (long version in Session 3.1).

Objectives and research questions

Presentation of “first” 2 Steps from the 6S-iterative approach.

- PPT to emphasize:
 - Understanding SMART criteria.
 - How to: Knowledge base – how to find information (e.g. research questions)?
 - Examples of RQ and how they fulfil the criteria of good research questions.
 - How to: creating a baseline according to the gaps and RQs.
 - How to: creating an innovation-line (after solution selection – stressing iterative approach).
- A virtual forum is open for “parking-lot” discussions, to be summarized in the group work.

Data collection, evaluation and metrics

Presentation of “middle” 2 Steps from the 6S-iterative approach:

- PPT to emphasize:
 - Analysing KPIs: definition and how to interpret them.
 - Baseline, innovation line and how to derive KPIs, measures, et cetera from that.
 - Data collection plan + data bias.
 - Describe qualitative and quantitative evaluation.
 - Explain the connection of data collection plan and comparison to the baseline.
- A virtual forum is open for “parking-lot” discussions, to be summarized in the group work.

Scenario and solution selection

Recap on the first outcomes + presentation of the “last” steps:

- PPT to emphasize:
 - Examples of realistic scenarios for Trials and tips/advice to design a trainee’s own scenario.
 - A “lessons from real Trials” forum with examples from past events.
 - Searching for solutions from the PoS (link to Session 6.2 PoS).
 - Stressing the need to create the innovation-line by beginning the next circle in the iterative approach.
- Handout with general descriptive statistics and their formulas and meanings + examples of qualitative methods for analysis.
- Online exercise on data visualization basics with exercises (e.g. Data sheets).

Session 3: Preparation phase

What are the steps and tasks needed to be carried out to design a Trial and who is involved in each stage?

- A virtual forum is open for “parking-lot” discussions or questions to be summarized in the group work.

Preparing Trial Material

Learning how-to prepare Trial material:

- PPT with voiceover with “How-To’s” formulated as “Tips & Tricks” and examples. As many trainees will have (great) experience with regards to preparing exercises, similarities and differences to Trials should be stressed:
 - Define instructions and roles.
 - Preparation of the physical space.
 - Preparation of technical stuff (Wi-Fi, data protection, fire walls and such).
 - Preparation of an agenda.
 - Communication to Trial participants.
 - Summarizing altogether.

Contact phase:

- Discussion of the open forum questions to clarify open issues from the E-learning session.
- Group exercise:
 - Based on a “Mini-cases” formulate.
 - Group evaluation/discussion on how precise presented gaps are / improvement opportunities.
 - Evaluate examples of Trial Objectives with the SMART principles.
 - Exercise on finding relevant information from the knowledge base.
 - Exercise: build a baseline and innovation-line.
 - Exercise: build-up a small data collection plan (who, what, when, how).
 - Discussion of pros and cons of different analysis approaches.
 - Exercise: build-up one scenario with all its elements (storyline, instructions, roles ...).

5.6 Session 4: Execution of the Trial

Table 5.6: Learning template for session 4

Session 4: Execution phase

What is the purpose and rationale behind proposed execution method?

How do you prepare for executing a Trial?

What are Dry Runs?

What are final adjustments?

What does it mean to execute a Trial?

Who is responsible for each one of above mentioned?

Target group and entry requirements

Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level, including:

- Basic project management skills.
- Some experience in running exercises.

Entry requirements:

Session 4: Execution phase

What is the purpose and rationale behind proposed execution method?

How do you prepare for executing a Trial?

What are Dry Runs?

What are final adjustments?

What does it mean to execute a Trial?

Who is responsible for each one of above mentioned?

- Trainee has completed previous sessions (1-3), is aware of sessions 6.1 GT and 6.3 TAP.
- Trainee has knowledge and understanding of the Preparation phase processes of a Trial:
 - Elements (steps).
 - Structure.
 - Outcomes / products of each step.
- Trainee has knowledge and understanding of interconnections between Preparation phase and offered support tools (GT, PoS, TAP, Test-bed):
 - Applications of tools per step.
 - Roles / usage of the tools.

Role involvement: Personnel, whose role is to design, plan and/or participate in execution of Trial, including evaluation activities (excluding participants / role players / support staff).

Constraints

(Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)

Duration: 45 min e-learning + 45 min contact-phase group-work.

Instructors: 1 TGM expert (can be someone who has run a Trial before as a member of Trial Committee).

Facilities: Moodle + contact phase location.

Location: E-learning from home; contact-phase at classroom.

Equipment: Computer with internet for e-learning; classroom with / computer with text processing software.

Level: EQF 6.

Learning outcomes

Have a knowledge or understanding of:

The scope of Execution phase of a Trial:

- Elements.
- Structure.
- Outcomes.

TAP as a support tool for the execution phase.

- What high-over is and is not documented in the TAP.
- How the TAP can be used during execution of a Trial.

Comprehension of:

- Required Trial execution resources.
- Difference between a test or a technical integration and a Dry Run.
- Difference between a Dry Run 1 and a Dry Run 2.
- Difference between Dry Runs and a Trial.

Be able to:

Execute Dry Runs:

Session 4: Execution phase

What is the purpose and rationale behind proposed execution method?

How do you prepare for executing a Trial?

What are Dry Runs?

What are final adjustments?

What does it mean to execute a Trial?

Who is responsible for each one of above mentioned?

- Draft the scope and extension of testing activities.
- Ensure the sufficient integration of solutions to be trialled with Test-bed environment and scenario development.
- Write a checklist (readiness review) for a Dry Run (i.e. what is to be tested and measured).

Execute Final Adjustments:

- Assess the outcomes of Dry Run 1.
- Determine a scope and extension of needed adjustments.
- Task Trial team accordingly.
- Disseminate and ensure the understanding of following actions.

Execute the Trial event utilising the outcomes of:

- Preparation phase.
- Dry Runs.
- Unforeseen events.

Take **responsibility** for:

- Implementing the execution process by designing and conducting subsequent Dry Runs and readiness reviews.
- Communicating execution plan with colleagues by utilising Trial Action Plan.
- Assessing the required readiness level for proper execution of Dry Runs and Trial.
- Conducting the Trial.
- Data collection, including considerations on ethical level.

Course learning strategy

E-Learning:

1. Introduction to the Execution Phase and its scope.

Animated PPT with voiceover presenting the workflow from the end of the Preparation phase through the steps of the Execution Phase (Dry Run 1, Dry Run 2 and Trial itself) with emphasis on the readiness status at the beginning and at the end of these events of:

- Test-bed arrangements.
- Solutions and their integration (if needed).
- Solution-driven scenario events.
- Data collection plan.
- Availability of participants.

2. Execution of a Dry Run 1 - Trial design applicability test and Trial readiness review.

Animated PPT with voiceover, which:

Session 4: Execution phase

What is the purpose and rationale behind proposed execution method?

How do you prepare for executing a Trial?

What are Dry Runs?

What are final adjustments?

What does it mean to execute a Trial?

Who is responsible for each one of above mentioned?

- Refers to the detailed scope of the Dry Run 1:
 - Assessment’s concerns.
 - Scope and extension of actions that readiness should be examined.
 - Formulation of adjustment plan.
- Presents the Dry Run 1 within the context of exemplary user-story.

3. Execution of a Dry Run 2 - final Trial readiness review.

Animated PPT with voiceover, which:

- Refers to the detailed scope of the Dry Run 2:
 - Verification of adjustment plan completion.
 - Scope and extension of actions that readiness should be examined.
 - Confirmation of overall ability to run the Trial.
- Presents the Dry Run 2 within the context of exemplary user-story.

4. Execution of a Trial.

Animated PPT with voiceover, which presents:

- Actions to be undertaken during the Trial execution.
- Execution of the Trial within the context of exemplary user-story.

5. Quiz with questions on Session 4.

- PPT with questions and answers for self-evaluation.

6. TAP as a support tool in the Execution Phase.

Animated PPT with voiceover, which:

- Presents the sections of TAP relevant to the Execution Phase steps.
- Gives the reference to the session 6.3 (Trial Action Plan).

Contact phase:

- Questions and answers on the issues raised during the e-learning part of this session.
- Group exercise: compose a simplified execution process based on results of former training sessions (i.e. outputs of the preparation phase contact-phase assignments); identify the shortcomings, which may be revealed during the Dry Run 1 and plan the final adjustments.

5.7 Session 5: Evaluation of the Trial

Table 5.7: Learning template for session 5

Session 5: Evaluation phase

Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions).

Assessing to what extent the solutions have showed potential to close gaps during the Trial.

Analysis of results, leading to registration in the knowledge database.

Recommendations for repetition of the Trial and/or future Trials.

Target group and entry requirements

Session 5: Evaluation phase

*Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions).
Assessing to what extent the solutions have showed potential to close gaps during the Trial.
Analysis of results, leading to registration in the knowledge database.
Recommendations for repetition of the Trial and/or future Trials.*

Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level.

Entry requirements:

- Has completed sessions 1 and 2.
- Recommended: has completed session 3, because without session 3 the gaps and research questions etc. are not familiarized with.
- Trainee is familiar with the TGM (at high level) and DRIVER+ terminology.

Role involvement:

- Personnel involved in Trial preparation, execution and evaluation, especially Trial owners and end-users.

For other related roles the session is voluntary.

Constraints

(Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)

Duration: 8 hours independent learning via e-learning platform, 2 hours face-to-face (during the contact session, coaching).

Instructors: TGM evaluation phase experts.

Location: Trial owner’s location and EASS Moodle e-learning platform.

Equipment: computer with internet access for e-learning; projectors, places for group work, computer assistance for contact-phase.

Level: EQF 6.

Learning outcomes

Have a knowledge or understanding of:

- The importance and purpose of the evaluation.
- How the evaluation of a Trial differs from that of an exercise/training.
- The phases (steps) of the evaluation process (i.e. data collection, analyses, answering the research question, disseminate conclusions).
- Relating research question and metrics (Key Performance Indicators) with the assessment results.

Be able to:

Assess the value and recommendations from Dry Runs:

- Perform dry runs of the evaluation itself and improve the process (determine needs for adjustments related to the evaluation).
- Update draft, the scope and extension of testing activities.
- Organise the data collection of what is to be tested.
- Organise (automatic) measurements for quantitative data analysis.

Evaluate the Trial event by applying the assessment methodology, utilising the outcomes of:

- Preparation phase – make sure / check actively that all that is needed has been implemented and is ready for the evaluation.
- Dry Runs - critical review of the first round of evaluation.
- Variations in the processes – take advantage of deviations in the execution of the Trial.

Session 5: Evaluation phase

Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions).

Assessing to what extent the solutions have showed potential to close gaps during the Trial.

Analysis of results, leading to registration in the knowledge database.

Recommendations for repetition of the Trial and/or future Trials.

- Solution implementation.

Take responsibility for:

- Data collection check.
- Analyse data and report/visualise them.
- Learn lessons from Dry Runs and Trials.
- Secure the input from results towards knowledge database.
- Conclusions and recommendations – workable and practical for implementation in next round of runs and Trials.
- Answering research questions.
- Dissemination of results (related to crisis management, Trial setup and solutions).

Course learning strategy**1. Data collection check:**

The goal of this step is to check, structure and verify the data that has been collected during the Trial, as well as to collect missing data. Identification of lacking data and the consequences for the conclusions that can be drawn.

Having defined the objectives, the relevant input/ output and actions for the data collection check in the preparation phase of a Trial are the following:

Input:

- Rough data collected from the Trial.
- Trial objectives and metrics specified.

Output:

- Achieve a verified and structured set of data.
- Overview of missing data and the consequences of that to the analysis.

E-learning:

This topic is best to be described via user power point with the voice over and should reflect back what was discussed during the session 3 (as long as this is not a prerequisite for the training it should be understandable also for those who have not done session 3 – for example through presumptions and examples).

Exercises for trainees, preparation for contact phase:

- Study an example of rough data and transform it to a certain structure. Verify the data.
- Make a preview of the possibilities to fulfil the objectives with the collected data.
- Make an overview of missing data and detailed plan of how to improve the current data set.
- Write a critical review of the data collection check and describe a step by step improvement plan for the upcoming runs and Trials.

Contact phase:

Discussion data collection on the following topics:

- Review of methods and techniques and topology: Results of qualitative techniques like interviews / questionnaires differ from more objective/technical measurements. What is the best method in what situation? What criteria can be defined?
- Was the data collection sufficient helpful for the Trial performance and learning topics?
- How to overcome problems with missing data / false data?

Session 5: Evaluation phase

Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions).

Assessing to what extent the solutions have showed potential to close gaps during the Trial.

Analysis of results, leading to registration in the knowledge database.

Recommendations for repetition of the Trial and/or future Trials.

2. Data analysis

The goal of this step is to combine, structure and present data that indicates – in accordance with the KPIs that have been formulated during the preparation phase – the degree to which crisis management performance was improved during the Trial, the effects of the solutions on this performance, how participants worked with the solution, and the role and significance of factors other than the solution.

To analyse data from objective performance measures, expert assessments, surveys, observations, interviews, focus group sessions, etc. the Trial owner can work with the following Trial stakeholders:

- Quantitative data analyst.
- Qualitative data analyst.
- Methodological advisors.

Basic methods are introduced. A deep level can only be reached on request and with individual support and coaching.

Input:

- Verified data from the Trial (resulting from the data collection check in the previous step).
- The result of the preparation phase: TGM Step 4 Formulate evaluation approaches and metrics.

Output:

Gather analysed data, including preliminary conclusions (from technical perspective of the Test-bed and methodological standpoint).

E-learning:

- Review the tools for data analysis: which is appropriate for what goal?
- How to link the data analysis tools/techniques with RQ and data collection plan.
- How to use templates to structure an evaluation approach to be filled by participants and Trial owners.

Exercises for trainees, preparation for contact phase:

- How does the data contribute to the research questions?
- Is it possible to compare data from dry runs and Trials, maybe with real events?
- Assess the availability of data (could this be collected otherwise, is it accurate and complete).
- Perform visualisation: mapping, databases, networks, text, mind maps, chart flows, graphical, infographic, etc.

Contact phase:

- Understanding of collected data and reviewing outliers: does everything make sense?
- Is there any post-processing needed? Calculation, modelling, trends, averages, et cetera?
- Archive for future Trials: how to guarantee that the data stays understandable and complete?

3. Answering the research question- analyses/synthesis

In this step, based on the analysed data, the research questions will be answered and conclusions will be drawn regarding the extent to which the objectives of the Trial have been met.

The concluding step involves formulating the answers to the research questions and supporting these answers with empirical evidence gathered during the Trial. It entails formulating the degree to which the crisis management performance objective(s), the solution objective(s) and Trial objective(s) have been achieved.

The result of this step is a set of answers to the research questions and a conclusion on the degree to which the objectives of the Trial have been met. In addition, for each dimension (crisis management, solution and Trial) recommendations might be provided.

Session 5: Evaluation phase

Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions).

Assessing to what extent the solutions have showed potential to close gaps during the Trial.

Analysis of results, leading to registration in the knowledge database.

Recommendations for repetition of the Trial and/or future Trials.

E-learning:

- Assessment of elaboration mission and Trial objectives.
- Assessment of translation of needs into measurable parameters + behaviour (are they significant, valid, applicable?).
- Effectiveness of solutions (elaborate advantages and disadvantages).
- Feasibility of solutions.

Exercises for trainees, preparation for contact phase:

- Improvement of crisis management through the solutions implementation (bridged the gaps?).
- Improvement of crisis management through the organisation of the Trial (with or without baseline measurements, possibility to avoid 'learning effect').
- Review of documented decisions in preparation phase (did any new problems/challenges pop up during the Trial that should have been worked out in earlier phases?).
- Review evaluation plan and recommendation for future updates (follow up Trials).
- Review of data collection (subjective, objective) and validity of data collection methods.

Contact phase:

- Possibility and extent of answering the research questions (how, what, is or will be, can or would, where, to what extent?).

For the learning strategy a user story is available. Examples will be elaborated in the training material.

4. Dissemination of the results

As a final step of the evaluation phase, all the results and knowledge gained will be disseminated to ensure they are made accessible to the project stakeholders and beyond, which should in turn, support the sustainability of the DRIVER+ outputs in the longer-term.

The means, ways and process to complete the dissemination phase will be explained in a ppt with voice over in the e-learning. The practical dissemination step will be discussed during the contact phase, alternated with short individual exercises to elaborate the dissemination information.

E-learning:

- How the results are made accessible to the project stakeholders?
- How the results are made accessible to external networks?
- How the results of solutions are to be stored and made accessible?

Exercises for trainees, preparation for contact phase:

- Entering results into the PoS (hands-on training).
- Entering results into the LLF (hands-on training).
- Submissions to the DRIVER+ Knowledge Base (hands-on training).
- Assess different dissemination strategies for external communication (messages, technique, target groups, etc.).

Contact phase:

The contact phase in concentrating to learning by doing where participants to practical tasks/exercises directly in their Trial context. During the e-learning phase participants will also solve self-assessment tasks which outline potential dilemmas or problems related to evaluation.

- Discuss the difference between internal and external dissemination.
- Discuss the chosen ways and content to inform the (project) stakeholders about the main findings and increase the project impact.
- Generate ideas for a larger audience (e.g. event, conference) for greater impact of the Trial

<p>Session 5: Evaluation phase <i>Evaluation of the Trial in three dimensions (Trial setup, crisis management, solutions). Assessing to what extent the solutions have showed potential to close gaps during the Trial. Analysis of results, leading to registration in the knowledge database. Recommendations for repetition of the Trial and/or future Trials.</i></p>
<p>results. <i>Assumed: a framework to collect lessons learned will be available at the end of the project.</i></p>

5.8 Session 6: Supportive tools

5.8.1 Session 6.1: Portfolio of Solution

Table 5.8: Learning template for session 6.1

<p>Session 6.1: Portfolio of Solutions <i>How to utilize a Portfolio of Solutions to advertise own solution(s) and to discover solutions for own Trial(s)?</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: Session 1, 2 and preferably 3 completed. Target Groups:</p> <ol style="list-style-type: none"> 1. Solution providers. 2. CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level, including: <ol style="list-style-type: none"> a. Trial owners. b. Personnel who actively participates in preparation, execution or evaluation of Trial. <p>Role involvement: CM practitioners involved in innovation; solution providers, solution owners, Trial owners/organizers.</p>
<p>Constraints (Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)</p>
<p>Duration: 45min e-learning. Instructors: 1 TGM expert (e.g. a Trial owner or Solution owner that has already participated in a Trial). Facilities: EASS Moodle e-learning platform + PoS website. Location: E-learning from home, e-learning with a tutor. Equipment: Computer with internet for e-learning. Level: EQF 6.</p>
<p>Learning outcomes</p>
<p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Understand the PoS structure and content. • Understanding how Solutions are advertised on the PoS. • Understand how PoS facilitates discovery of Solutions for use in specific Trials. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Taxonomy of the CM functions; CM gaps.
<p>Be able to: <u>Analysis:</u></p>

<p>Session 6.1: Portfolio of Solutions</p> <p><i>How to utilize a Portfolio of Solutions to advertise own solution(s) and to discover solutions for own Trial(s)?</i></p> <ul style="list-style-type: none"> • Describe own Solution in PoS. • Identify potential Solutions for a Trial. <p><u>Synthesis</u></p> <ul style="list-style-type: none"> • Understand PoS concept and explain it to colleagues. <p>Take responsibility for:</p> <ul style="list-style-type: none"> • Solution providers - advertising own Solution(s). • Trial owner: Discover Solutions that claim to address specific CM functions and/or CM gaps (e.g. for use in a Trial).
<p>Course learning strategy</p> <ul style="list-style-type: none"> • Animated PPT with voiceover: PoS concept in general, with examples: <ul style="list-style-type: none"> ○ Choose a potential “Solution” for a Trial. ○ Advertise own “Solution”. <p>This animated PPT contains:</p> <ol style="list-style-type: none"> 1. Explanation of PoS role during various problem phases: <ol style="list-style-type: none"> a. PoS during “Solution” preparation. b. PoS during “Trial” definition. 2. Explanation of PoS content and type of information that is presented in PoS: <ol style="list-style-type: none"> a. PoS structure. b. “Solution” description. c. CM functions taxonomy. d. CM gaps. 3. Introduce Solution reference scenarios (to be further elaborated in session 6.2). <ul style="list-style-type: none"> • Self-evaluation: <ul style="list-style-type: none"> ○ Questions and answers – serving informative role, not designed to be barrier. ○ Task to complete: <ul style="list-style-type: none"> ▪ Introduce a simplified “Solution” to the PoS. Compare results of that with an example. ▪ Discover 3-5 solutions addressing specific CM functions/CM gaps. Assess their potential (e.g. for a Trial) based on available information.

5.8.2 Session 6.2: Guidance Tool

Table 5.9: Learning template for session 6.2

<p>Session 6.2: Guidance Tool</p> <p><i>How can the Guidance Tool assist the Trial committee and other participants using the TGM.</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: Has completed sessions 1 and 2 and 6.1.</p> <p>Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level and have basic project management skills.</p> <p>Role involvement: Practitioners who are involved in preparation, execution and evaluation of Trials; solution owners / providers that wish to describe a reference scenario for use of their solution(s).</p>
<p>Constraints</p>

Session 6.2: Guidance Tool
<i>How can the Guidance Tool assist the Trial committee and other participants using the TGM.</i>
(Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)
<p>Duration: 45min e-learning + 45min contact-phase group-work + GT.</p> <p>Instructors: 1 GT expert.</p> <p>Facilities: Moodle + contact phase location.</p> <p>Location: E-learning from home; contact-phase at classroom.</p> <p>Equipment: Computer with internet for e-learning.</p> <p>Level: EQF 6.</p>
Learning outcomes
<p>Have a <u>knowledge or understanding of:</u></p> <ul style="list-style-type: none"> • The purpose of the GT and its main focus on the preparation phase of a Trial. • Difference between Trials and solution reference scenarios. • The existence of a repository with examples and lessons learned. • The importance and purpose of using a GT to facilitate decision sharing and collaborative planning during Trial preparation, execution and evaluation phase. • When to use other tools (like the Test-bed). • Relation between GT and PoS.
<p>Be <u>able to:</u></p> <ul style="list-style-type: none"> • Create and define valid Trials and solution reference scenarios using the TGM with the assistance of the Guidance Tool. • Manage Trial “Team” at GT/PoS website.
<p>Take <u>responsibility for:</u></p> <ul style="list-style-type: none"> • Using Guidance Tool to define and revise a Trial plan, or solution reference scenario. • Advertising the Solution capabilities in form of a reference scenario.
Course learning strategy
<p><u>E-Learning:</u></p> <ul style="list-style-type: none"> • Explanation of all end-user aimed components of the Guidance Tool. <i>More detailed information about overall structure, phases and functionality.</i> <ul style="list-style-type: none"> ○ Animated PPT with voiceover about overall role of GT in Trial design with a generic example: <ul style="list-style-type: none"> ▪ Prepare a Solution for a Trial utilizing GT ○ Links to detailed documentation that will be available after complete implementation of GT on the driver+ site (manuals/tutorials/training) per component. • Explanation of processes to design a Trial and implement TGM. <ul style="list-style-type: none"> ○ Animated PPT with voiceover containing use cases. ○ Small assignment to use the GT to define a Trial, including: <ul style="list-style-type: none"> ▪ Trial gaps and rationales for linking gaps to a Trial. ▪ Trial objectives. ▪ Research questions. ▪ KPIs and the data collection plans.

<p>Session 6.2: Guidance Tool <i>How can the Guidance Tool assist the Trial committee and other participants using the TGM.</i></p>
<ul style="list-style-type: none"> ▪ Selecting the solutions for use in a Trial. <p>Contact phase:</p> <ul style="list-style-type: none"> • Trainees encouraged to share their own ideas about which components to select for own Trial design idea. • Check to see outstanding questions / things not understood after e-learning. • Group work to plan process for Guidance Tool assisted Trial design.

5.8.3 Session 6.3: Trial Action Plan

Table 5.10: Learning template for session 6.3

<p>Session 6.3: Trial Action Plan <i>What is the scope of a Trial Action Plan and how to use it during Trial Preparation and Execution Phases?</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: Trainee has completed session 1. Target Group: CM practitioners involved in innovation with at least a BA/BSc education or similar professional working level, including:</p> <ul style="list-style-type: none"> • Basic project management skills. • Some experience in running exercises. <p>Role involvement: Personnel whose role is to participate in design, preparation, execution and/or evaluation of a Trial (including role players / support staff).</p>
<p>Constraints (Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)</p>
<p>Duration: 45 min e-learning + 15 min contact-phase Q&A session. Instructors: 1 TAP expert (can be someone who has run a Trial before as a member of Trial Committee). Facilities: EASS Moodle e-learning platform + contact phase location. Location: E-learning from home; contact-phase at classroom. Equipment: Computer with internet for e-learning; classroom with / computer with text processing software. Level: EQF 6.</p>
<p>Learning outcomes</p>
<p>Have a <u>knowledge or understanding of:</u> <u>Knowledge/understanding of:</u></p> <ul style="list-style-type: none"> • The TAP structure and content. • The concept of a “living document”. • The “TAP completion schedule”. • “The Trial Event phases and their results” schematics. • The role of TAP snapshots. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Difference between the TAP and a report on Trial preparation and execution. • TAP role in the process of preparation and execution of a Trial.

<p>Session 6.3: Trial Action Plan</p> <p><i>What is the scope of a Trial Action Plan and how to use it during Trial Preparation and Execution Phases?</i></p> <ul style="list-style-type: none"> • Roles and responsibilities inside TAP. • What part and to what extent TAP structure may be modified. • How important it is to clear a TAP by removing redundant and unnecessary information.
<p>Be able to:</p> <p><u>Analysis:</u></p> <ul style="list-style-type: none"> • Identify roles & responsibilities. • Perceive the consequences of delaying any part of the TAP. <p><u>Synthesis</u></p> <ul style="list-style-type: none"> • Compose the TAP completion plan and review schedule and explain it to colleagues.
<p>Take responsibility for:</p> <ul style="list-style-type: none"> • Assigning roles and delegating subsequent tasks and TAP chapters.
<p>Course learning strategy</p>
<p>E-Learning:</p> <ol style="list-style-type: none"> 1. Purpose and scope of the Trial Action Plan as a “living document”. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. ○ Presents the TAP utilisation within the context of exemplary user-story. ○ Reference to the download of the most up-to-date TAP template file. 2. TAP content and structure, snapshots as a method of keeping the TAP concise. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. ○ Showing the TAP template’s structure. 3. Role of TAP during Trial Preparation Phase and its subsequent steps. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. ○ Showing the preparation steps in the TAP template. 4. Role of TAP during Trial Execution Phase and its subsequent steps. <ul style="list-style-type: none"> ○ Animated PPT with voiceover. ○ Showing the execution steps in the TAP template. 5. FAQ on TAP. <ul style="list-style-type: none"> ○ Quiz with questions on TAP. <p>Contact phase:</p> <ol style="list-style-type: none"> 6. Questions and answers on the issues raised during the E-learning part of the session.

5.8.4 Session 6.4: Test-bed

Table 5.11: Learning template for session 6.4

<p>Session 6.4: Test-bed</p> <p><i>Which support functionalities can be provided by the Test-bed’s components?</i></p>
<p>Target group and entry requirements</p>
<p>Entry requirements: Has completed sessions 1 and 2 (and preferably 3, 4 and 5).</p> <p>Target Group: CM practitioners and IT-experts with at least a BA/BSc education or similar professional working level.</p> <p>Role involvement: Personnel who is involved in preparation, execution and evaluation of Trials.</p>

Session 6.4: Test-bed

Which support functionalities can be provided by the Test-bed's components?

Constraints

(Time, instructors, facilities, location, equipment, to be accredited at a specific level, etc.)

Duration: 30min e-learning + 30/45min contact-phase group-work.

Instructors: 1 Test-bed expert.

Facilities: EASS Moodle e-learning platform + contact phase location.

Location: E-learning from home; contact-phase at classroom.

Equipment: Computer with internet for e-learning; classroom laptop, projector and screen.

Level: EQF 6.

Learning outcomes

Have a **knowledge or understanding of:**

Knowledge of:

- Know about the existence of the Test-bed, its components for Trial-users and extra for developers.
- Where to find detailed (developer) documentation per component (13) (14) and Test-bed installers (i.e. Docker images).

Comprehension of:

- Aims and functionalities of the Test-bed's Trial-user components.

Be able to:

- Select Test-bed components needed/wanted for own Trial.
- Identify simulators and data-sources needed to support own Trial.
- Find and go through end-user tutorials/instructions/training for components selected.
- Brief IT-experts/developers about the own Trial, why selected Test-bed components are needed in this Trial and potentially which connections are to be developed.

Take responsibility for:

- Arranging organisation internal or external IT-support to get the Test-bed up and running for own Trial.

Course learning strategy

E-Learning:

- **Explanation of all end-user aimed components of the Test-bed.**
More detailed information about overall design and information per component, as second phase after the general introduction in Session 1.
 - Animated PPT with voiceover about overall Test-bed lay-out.
 - Documentation slides per component, based on component specifications in D923.11 (13).
 - Links to manuals/tutorials/training per component.
- **Explanation of the developer/tester aimed components of the Test-bed.**
 - Reference to overall Test-bed lay-out visual.
 - Documentation slides per component, based on component specifications in D923.11 (13).
 - Reference to standards used for CIS and CSS adapters.

Session 6.4: Test-bed

Which support functionalities can be provided by the Test-bed's components?

- **Explanations of processes to assemble, install, test and run the Test-bed.**
 - Animated PPT with voiceover containing user-stories.
 - Examples of (reference) implementations as described in D923.21 (14).
 - Small assignment to select components needed/interesting to use in own Trial design + free text field to add rationale per selected component (results flow to contact-phase).

Contact phase:

- Trainees encouraged to share their own ideas about which components to select for own Trial idea.
- Check to see outstanding questions / things not understood after e-learning.
- Group work to plan process for Test-bed component training, set-up, testing and operation.

6. Training Module development and implementation plan

The TGM was developed during the first phase of DRIVER+ and considerably further elaborated during the DRIVER+ project. The methodology itself is a theoretical concept which needs to be tested during realistic conditions for which the Trials offer a perfect opportunity. The feedback from those Trials is essential for TM design. It might refine or empower original theory or might lead to considerable or moderate changes in the original concept. That again leads to constant development for training and training materials for the entire life span of the project. How the process to update the TM is handled after the project end is to be discussed in the project's sustainability WP954 (see also section 7). This section presents the TM's development and implementation plan as depicted in Table 6.1. There might be some changes later on due to experiences gained.

Table 6.1: TM development and implementation plan

Activity 1:	Description:	Time:	Responsibility:
TRIAL 2: support (i.e. TM version 1).	Request based consultancy & training.	Ongoing.	TGM support team to Trial 2.
Gathering feedback.	Every Trial produces case study material and indications for training content, this should be gathered for training purposes.	Ongoing - November, 2018.	TGM support team and TM working group.
Version 1 is ready when the Trial 2 Trial design is ready and documented in the Trial 2 TAP, because at this completeness also indicated the committee has the opinion all is prepared well enough and there are no more questions regarding the TGM or its supportive tools.			
Activity 2:	Description:	Time:	Responsibility:
Training design and development.	Session template design and development, setting up the e-learning platform.	Ongoing- 15/08/2018.	TM working group.
Training content design for version 2.	<ol style="list-style-type: none"> 1. Collecting all base materials for all sessions. 2. Modifying and updating this material. 3. Creating new missing material- including self-assessment tests. 4. Creating material for the contact phase. Creativity WS. For each session. 5. Proof reading. 	July- September (e-learning), 2018 July-October (contact phase), 2018.	TM working group.
TRIAL 3 and 4: training.	Face-to-face training session during the workshop 0. Including preparation and feedback from TGM Trial support team.	5-8/11/2018 updated Workshop 0 in The Hague, The Netherlands.	Selected TM instructors.

Gathering feedback.	Every Trial produces case study material and indications for training content, this should be gathered for training purposes.	9-15/11/2018 regarding delivered TM contents After execution of training for Trials 3 and 4 a second, critical review of the TM should occur.	TM working group.
Version 2 ready by October/November 2018. Aimed at Trial 3 and 4 committees. E-learning available 01/10/2018. Face-to-face day during Updated Workshop 0 on 5-8/11/2018.			
Activity 3:	Description:	Time:	Responsibility:
Sustainability.	Actions needed to be taken in order to provide training support after DRIVER+ has ended.	Till the end of the project.	TM working group and WP954 sustainability working group.
Online support and training delivery.	<ol style="list-style-type: none"> 1. Online support for e-learning. 2. Design of the training content for external users (stand-alone tutorials vs. teacher supported courses), implementing lessons learned from all Trials to TM. 3. Financing and organization of training courses after DRIVER+. 	November 2018 till November 2019.	EASS for Moodle support TM working group for updating to final version.
Final Version ready before end of project (exact date to be aligned with SP95 sustainability working group). Aimed at project-external potential Trial organizers.			

Especially regarding the sustainability aspects of the final versions, there are a couple of topics to discuss and decide upon. This process must occur within work-package WP954 about sustainability of the DRIVER+ project. These topics are:

- *How to handle a request from a project-external entity “I want to learn how to apply the D+ TGM”?*
The first suggestion is to link the e-learning course and materials (including tutorials) the DRIVER+ website and add functionality for visitors to register themselves for the TM. The TM will maintain to be based on EASS’s Moodle e-learning platform and will be administrated by EASS. This suggestion has to be discussed further and jointly decided upon. Maybe there are also other options currently not yet known.
- *How will the TM final version be conducted, especially regarding scheduling of the contact-phase?*
When the TM final version is also hosted on EASS’s Moodle platform, the e-learning part of the final version will be followed by trainees the same way Trial 3 and 4 trainees follow the version 2 e-learning. However, for the contact-phase this might differ, as outside the project there are no planned activities for this with (travel-)budgets allocated. There are academic partners within DRIVER+ consortium with expertise and facilities to facilitate contact-phase training days. There is a possibility that one (or several) runs the course as their further education training program and they could schedule it via the DRIVER+ website. This has to be further discussed in WP954 with especially these academic partners included.

- *How to maintain and organize a TGM instructor’s pool with sufficient, proficient instructors?*
One option could be to use a “train the trainer” approach, such that (at first instance project internal) instructors train other, novice instructors. During the DRIVER+ project one option could be to invest in trained instructors who are able to deliver the training at their own countries in the local language and educate new instructors within their own country/organisation. This option however needs more exploration.
Next to this, also a decision must be made on how this pool of instructors is organised.
- *Who maintains TM content and handles requests for updates/changes?*
The previous bullet point answers could be a partial answer to this. It will depend on intellectual property rights and which organizations continue using and updating the TGM. However, this issue is not to be solved within this deliverable since it is outside the mandate of this deliverable.

7. Conclusions, recommendations and links/dependencies with other SPs/WPs

The TM's contents, delivery methods and each session in detail have now been designed based on the TNA results. The next step is to produce these contents on this design. They must be reviewed, tested, adjusted and delivered to the project-internal Trial committees first, according to the planning described in Table 6.1. This is followed by a second review, which is actually done in 3 steps:

1. After Trial 2, to review the results of TM version 1.
2. After the updated Workshop 0, to collect TM version 2 trainee feedback.
3. After Trials 3 and 4, to review the final results of TM version 2.

This collection of feedback is done via evaluation questionnaires – filled in by Trial committee members and selected solution providers - and via critical feedback from the TGM support team. After this, the Final Version of the TM can be created, tested and delivered.

For this Final Version to be a useful DRIVER+ project result, first some sustainability issues must be discussed and agreed upon by WP924 and WP954 (see also section 6). When a high-quality TM Final Version is released, this must be communicated externally (i.e. WP952). There is thus a clear and very important link between this T924.1 and SP95.

Next to these DRIVER+ project sustainability aims, there are specific links between the readiness and quality of the TM to the following Trials (i.e. T924.1 vs. SP94):

- TM version 1 and WP944 - to make sure that Trial 2 committee implements the TGM and available supportive tools well enough. This explanation, training and support will be delivered, as explained in sections 5.1.3 and 6, in a consultative, topic-based manner.
- TM version 2 and WP945 and WP946 - to make sure that both Trial committees are well trained in the TGM and the supportive tools.
- TM versions 1 and 2 and WP943 - to make sure that lessons identified/learned are taken up in training to committee members of following Trials.
- TM Final Version and WP947 - to make sure that the final TGM and supportive tools are used well and are demonstrated well within the Final Demo.

Last to note are the links between the TM and WP923 and SP93, the latter ones being the development work-package of the Test-bed and linking up solutions with the Test-bed. For the software development work-packages to be successful, both the software developers/designers and the project managers must understand the DRIVER+ aims, the TGM basics and especially to functionalities the Test-bed does and does not provide. TM's sessions 1, 2 and 6.4 are thus useful for them as well. And vice versa, the feedback of these developers and managers should flow to improving the TM. This feedback is to be collected from the selected solution providers during the evaluations of Trials 2-4 and from via a questionnaire to other project-internal solution providers.

Regarding this feedback from trainees and TGM experts, one final critical note is to be made. Although the TM design as presented in this deliverable aims to achieve training on the TGM and supportive tools such that trainees can organize a new Trial by themselves, from the feedback received on the TGM, Trial evaluations and TGM evaluation it might be concluded that a proper TGM application requires more than just a generic training and a supportive information system, but also a well-balanced network of domain experts offering different kinds of support activities during the preparation phases of especially large, complex Trials as those organized within the project (i.e. like already done in Trial 1-4 by the TGM support team). This is a potential conclusion already to be taken in account when discussing the TGM's and TM sustainability model.

References

1. **Akenroye, Temidayo O.** Factors Influencing Innovation in Healthcare: A conceptual synthesis. *The Innovation Journal: The Public Sector Innovation Journal*. 2012, Vol. 17 (2), 3.
2. **DRIVER+project.** *D922.21- Trial guidance methodology and Guidance Tool specifications (version 1)*. 2018.
3. *Creating Strategic Value through the Language of Learning: Building a transparent Learning Architecture.* **Ruijter, M., et al.** University of Limerick, Ireland : Fifth International Conference on HRD Research & Practice across Europe, 2004, 27-28 May.
4. **Illeris, Knud.** *Contemporary theories of learning, Learning theorists...in their own words. Pages 16-24 (Chapter 1: A comprehensive understanding of human learning)*. Abingdon : Routledge, 2009. ISBN 1 0: 0 - 415- 47343- 8 (hbk).
5. **Adams, Linda.** Learning a New Skill is Easier Said Than Done. *Gordon Training International*. [Online] 2016. [Cited: 22 June 2018.] <http://www.gordontraining.com/free-workplace-articles/learning-a-new-skill-is-easier-said-than-done/>.
6. **Kolb, David A.** *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, N.J. : Prentice-Hall, Inc., 1984.
7. **Hasan.** How to Conduct a Training Needs Analysis. *DIR Journal - Guides - Training Employees*. [Online] 6 June 2007. [Cited: 31 July 2018.] www.dirjournal.com/blogs/how-to-conduct-a-training-needs-analysis/.
8. **Romazowski, A.J.** *A Systems Approach to Training and Education*. London : Kogan Page Ltd, 1984. ISBN-13: 978-0850382303.
9. **Frontex.** *Sectorial Qualification Framework for Border Guarding, SQF Facilitators handbook - pages 10-54*. s.l. : Frontex, 2014.
10. **ECTS Users' Guide.** [Online] 20 September 2016. [Cited: 29 June 2018.] https://ec.europa.eu/education/sites/education/files/ects-users-guide_en.pdf. page 10.
11. **Descriptors defining level in the European Qualifications Framework (EQF).** [Online] 29 June 2018. [Cited: 29 June 2018.] <https://ec.europa.eu/ploteus/en/content/descriptors-page>.
12. **Bloom's Taxonomy Action Verbs.** [Online] 19 January 2018. [Cited: 29 June 2018.] <http://www.fresnostate.edu/academics/oie/documents/assesments/Blooms%20Level.pdf>.
13. **DRIVER+project.** *D923.11 - Functional specification of the Test-bed infrastructure (version 1)*. 2018.
14. —. *D923.21 - First release of the Test-bed reference implementation*. 2018.

Annexes

Annex 1 – DRIVER+ Terminology

In order to have a common understanding within the DRIVER+ project and beyond and to ensure the use of a common language in all project deliverables and communications, a terminology is developed by making reference to main sources, such as ISO standards and UNISDR. This terminology is presented online as part of the Portfolio of Solutions and it will be continuously reviewed and updated³. The terminology is applied throughout the documents produced by DRIVER+. Each deliverable includes an annex as provided hereunder, which holds an extract from the comprehensive terminology containing the relevant DRIVER+ terms for this respective document.

Table A1: DRIVER+ Terminology

Terminology	Definition	Source
Competence	Demonstrated ability to apply knowledge and skills to achieve intended results.	ISO22300 (2015) p 5.
Exercise	Process to train for, assess, practise and improve performance in an organization. Note 1 to entry: Exercises can be used for validating policies, plans, procedures, training, equipment, and inter-organizational agreements; clarifying and training personnel in roles and responsibilities; improving inter-organizational coordination and communications; identifying gaps in resources; improving individual performance and identifying opportunities for improvement; and a controlled opportunity to practise improvisation. Note 2 to entry: See also test.	ISO22300 (DRAFT 2017) 11.
Guidance Tool (GT)	A software tool that guides Trial design, execution and evaluation in a step-by-step way including as much of the necessary information as possible in form of data or references to the portfolio of solutions.	Initial DRIVER+ definition.
Innovation	Implementation of a new or significantly improved product (good or service), or process, new marketing method, or new organizational method in business practices, workplace organization or external relations. ISO 37500:2014(en) Guidance on outsourcing, section 3.6: new or changed object realizing or redistributing value.	ISO 9000:2015(en) Quality management systems — Fundamentals and vocabulary, 3.6.15.
Portfolio of Solutions (PoS)	A database driven web site that documents the available Crisis Management solutions. The PoS includes information on the experiences with a solution (i.e. results and outcomes of Trials), the needs it addresses, the type of practitioner organisations that have used it, the regulatory conditions that apply, societal impact consideration, a glossary, and the design of the Trials.	Initial DRIVER+ definition.

³ Until the Portfolio of Solutions is operational, the terminology is presented in the DRIVER+ Project Handbook and access can be requested by third parties by contacting coordination@projectdriver.eu.

Terminology	Definition	Source
Test-bed	<p>The software tools, middleware and methodology to systematically conduct Trials and evaluate solutions within an appropriate environment.</p> <p>An “appropriate environment” is a testing environment (life and/or virtual) where the trialling of solutions is carried out using a structured, all-encompassing and mutual learning approach. The Test-bed can enable existing facilities to connect and exchange data, providing a pan-European arena of virtually connected facilities and crisis labs where users, providers, researchers, policy makers and citizens jointly and iteratively can progress on new approaches or solutions to emerging needs.</p>	Initial DRIVER+ definition.
Training	Activities designed to facilitate the learning and development of knowledge, skills, and abilities, and to improve the performance of specific tasks or roles.	ISO22300 (2015) 7.
Trial	An activity for systematically finding and testing valuable solutions for current and emerging needs in such a way that practitioners can do this in a pragmatic yet systematic way.	Initial DRIVER+ definition.
Trial Action Plan (TAP)	The main Trial planning document, facilitating collaborative planning and supporting combined execution. It covers all areas related to the Trial organization and will be used to record efforts, circulate decisions and assess progress.	Initial DRIVER+ definition.
Trial Guidance Methodology (TGM)	A structured approach from designing a Trial to evaluating the outcomes and identifying lessons learned.	Initial DRIVER+ definition.

Annex 2 – Online TNA survey template

This survey template was used for training needs analyses input from potential trainees. The original template was developed for and electronic survey platform (Lime Survey). This template is a modification of this online version to be included in this document. The template was tested twice amongst a group of 6 persons before it was launched.

TRAINING NEEDS ANALYSES QUESTIONNAIRE

Foreword

Launched in May 2014, DRIVER (Driving Innovation in Crisis Management for European Resilience) and continuing in September 2017 (as DRIVER+) under the 7th Framework Programme of the European Commission. The project's main aim is to cope with current and future challenges due to increasingly severe consequences of natural disasters and terrorist threats, by the development and uptake of innovative solutions that are addressing the operational needs of practitioners dealing with Crisis Management.

During the project, two training modules will be offered to facilitate the use of the guidance tool and of the guidance methodology. The training module will be designed for all relevant stakeholders actively involved in Trials. It will be focussed on:

- Ensuring the correct understanding of methodology in all Trials.
- Ensuring utilization and implementation of guidance methodology.
- Ensuring effective utilization of the guidance tool.

In order to customize and match your expectations to training, the following survey has been created. It would not take longer than 15 minutes to fill. The survey is anonymous and your input will be used only for training program and content design and will not be used for publication purposes. Thank you very much for your effort and time.

Marek Link

Task leader 924.1

Background information

Please select:

Gender: Female ; Male

Age: 18-26 ; 27- 40 ; 41-60 ; 61-....

Agency (Police, Rescue, etc...) ; SME/industry ; Academy or research institution ; other

Job title/ position

Participation in Trials: Trial 1 ; Trial 2 ; Trial 3 ; Trial 4 ; other

1. What is/are your current or potential roles in Trials (multiple choices available)?
- a. **Trial Owner**- responsibility for the overall management and success of the Trial.
 - b. **Solution Coordinator**- leading, controlling, utilisation and assessment of solution integration process, facilitation of the solution selection process.
 - c. **User Coordinator**- collection of initial list of gaps, communication and coordination.
 - d. **Main Organizer**- coordination of the whole event, strategic level decision making.
 - e. **Event Coordinator**- coordination of the support activities.
 - f. **Scenario Coordinator**- selection of gaps and research questions, scenario development.
 - g. **Technical Coordinator**- coordination of the technical component.
 - h. **Training Coordinator**- conclusion of training (in use of tec. solution provided for the Trial).
 - i. **Logistics Coordinator**- coordination of the logistical planning and communication.
 - j. **Trial Supervisor (Director)**- accepting the Trial scenario, controlling the flow of Trial.
 - k. **Safety Officer**-safe conduct of the Trial.
 - l. **Solution Assessment conductor**-conducting and coordinating the assessment of the solution.
 - m. **Methodology validation conductor** -conducting and coordinating the assessment of utilized solutions.
 - n. **First impression evaluator**-conducting and coordinating the validation of Test-bed guidance, methodologies and infrastructure.
 - o. **Review leader**- Conducting the Status reviews and the Trial Readiness Reviews.
 - p. **Other, please describe...** (free text).

2. I have some professional experience in running crises management exercises
yes ; to some extend ; no

If yes or to some extend a pop up for free text:

Please describe some of your own experiences

Free text box

3. I have some professional experience in testing out new crises management solutions:
yes ; to some extend ; no

Please describe some of your own experiences

Free text box

4. With which topics do you struggle in setting up, running and evaluating these exercises/tests? And why?

Free text box

Your needs and expectations

To ensure full implementation, the guidance tool and methodology a special training will be held. The following section focuses on knowledge, skills and competencies what the training should include to match your needs and expectations:

- 5. What are your personal expectations towards training within DRIVER+ (Content, information, skills):

<i>Free text box</i>

- 6. What are your learning preferences in terms of methods and formats?
(1- not my preference, 2- rather not, 3- rather yes, 4- my favourable preference)

	1	2	3	4
Traditional lecturing/presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Problem solving oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Group works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Simulations/real life tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Case studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
e-learning support/online learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Independent work/study (take home assignments)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Combined: face-to-face and e-learning supported independent learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Would you like to receive training material beforehand (like PP slides)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Why this method does/does not work for you?	<i>Free text</i>			
Other, please specify	<i>Free text</i>			

Your challenges and developments per phase

- 7. Looking to the near and further future: which challenges and developments do you foresee in DRIVER+ Trials? And why?

For the preparation phase:

Free text box

For the execution phase:

Free text box

For the evaluation phase:

Free text box

Final tips and tricks

- 8. Do you have any tips/tricks for us?
(Can be of practical nature, or very methodical/theoretical, etc. Any advice is always useful.)

Free text box

Thank you very much for your effort!

Annex 3 – Full text responses from online TNA survey

This annex contains all the responses from the TNA online survey. Refer to Annex 2 for the questions asked in the survey.

Response rate and background information

The overall response rate is 13. There are 12 roles predefined who are directly involved within development, coordination and assessment in Trials the maximum approximate response rate should have been 48 that concludes to response rate 27%. Some of the persons might have double roles and some of the Trials have not nominated the full team personnel yet. The response rate is solid enough to be used as training development input if used together with the feedback from TGM support experiences.

- Age: Out of 13 responses; 10 persons belong to age group 27- 40 and 3 persons 41-60.
- Gender: 9 males, 4 females.
- Agency/organization: 9 Academy or research institution, 2 SME/Industry, 2 Other
- Positions: 5 roles related to research and/or research coordination, 3 roles related to project management, 5 roles related to CM expert or specialist level.
- Participation per Trial:

Trial No.	Response Rate
1	5
2	1
3	1
4	2
Other	4

Current or potential roles in Trials

	Role	Responses
1	Trial Owner - responsibility for the overall management and success of the Trial.	7
2	Solution Coordinator - leading, controlling, utilisation and assessment of solution integration process, facilitation of the solution selection process.	7
3	User Coordinator - collection of initial list of gaps, communication and coordination.	2
4	Main Organizer - coordination of the whole event, strategic level decision making.	1
5	Event Coordinator - coordination of the support activities.	1
6	Scenario Coordinator - selection of gaps and research questions, scenario development.	1
7	Technical Coordinator - coordination of the technical component.	2
8	Training Coordinator - conclusion of training (in use of tec. solution provided for the Trial).	1
9	Logistics Coordinator - coordination of the logistical planning and communication.	0
10	Trial Supervisor (Director) - accepting the Trial scenario, controlling the flow of	1

	Role	Responses
	Trial.	
11	Safety Officer -safe conduct of the Trial.	1
12	Solution Assessment conductor -conducting and coordinating the assessment of the solution.	1
13	Methodology validation conductor -conducting and coordinating the assessment of utilized solutions.	1
14	First impression evaluator -conducting and coordinating the validation of Test-bed guidance, methodologies and infrastructure.	3
15	Review leader - Conducting the Status reviews and the Trial Readiness Reviews.	2
16	Other, please describe..... (free text).	1 - SP94 leader

Professional experience in running crises management exercises

Yes	To some extend	No
4	5	4

Comments if response was "Yes" or "To some extend":
<ul style="list-style-type: none"> • High Level Coordination Course (2006-20017). • Crisis management exercises in frame of 7FP PRACTICE, 7 FP EDEN. • Number of national (Poland) exercises on municipality and province level". • Participation in few crises management exercises; supporting crisis Managers with satellite and airborne based crisis Information and situational awareness. • I participated or organized several civil protection exercises (notably with the role of scenario implementation director) and a previous experiment in DRIVER+. • Participation in EU exercises; supporting crisis Managers with satellite based crisis information.
<p>Organizer:</p> <ul style="list-style-type: none"> • Project EDEN 2015 Tabletop Initial Exercise. • Project EDEN 2016 Large Scale Demonstration (TTX). • CPX exercises for services and crisis management staff of biggest open air free festival in Europe - Woodstock Festival Poland. • Organization of other trainings, drills, simulations, field tests.
<p>Participation in organization (preparation and execution) of:</p> <ul style="list-style-type: none"> • Project DRIVER: experiment 43 (organizer and conductor of polish part - TTX exercise). • Project PRACTICE: episodes during Pionex country level field exercises, 2014. • Project EDEN Simulation for virtual facility 2014-2015. • Project EDEN: RN episodes during regional exercises in Poland, 2015. • Project EDEN: Large Scale Demonstration - field tests in the Exclusion Zone in the Pripjat/Chernobyl area.
<ul style="list-style-type: none"> • EU CARPATHEX and other international exercises being a member of organizational team. • Scenario coordinator, logistic coordinator. • Only in the former DRIVER and some exercises in the defence domain. • Organization of Union Civil Protection Mechanism Courses for European Commission.

Knowledge, skills and competencies what the training should include

Response No.	Free text given by the responder
1	I expect that Methodology training will bring examples how to use each part (step) of the Methodology as well as each of its components (Trial Guidance Methodology Handbook, the Guidance Tool and The Test-bed infrastructure). I need to be shown how the step-by-step approach works on certain examples: table-top exercise and field training. Also, I want to receive some examples what typical difficulties I may face using the methodology and how to solve them.
2	Learn about methods (for data analysis of questionnaires and focus groups for instance), learn about innovative tools that could make our lives easier (for example for data collection, for scenario development or description).
3	It would be better also to focus the training on the specificities of the Trial (i.e. type of set up, type of participants involved etc.) rather than having general presentations.
4	No special focus; training containing all aspects of a Trial.
5	Content: solutions available to tackle the crisis, methodology (what kind of "roadmap" will it provide us to tackle different crisis management situations).
6	Where to find knowledge (practical skills in browsing and searching through DRIVER and DRIVER+ deliverables, including Project Handbook.
7	Case-study (oriented on project management) basing on abstract sample (organization of abstract type of event) however by using TAP.
8	Practical utilization of 6-step Approach of TGM. Measuring the GAP bridging capabilities.
9	Samples (case studies) combined with group work on the subject of KPI and evaluation approaches -> especially basing on "trouble makers" - types of tools that are known to be hard to measure.
10	Detailed Information about the GT and methodology. How to work with it and how to use it. What is the relationship with the Trials? What must be considered by the Trials? Relationship to other tools. How can/could Trials or other tools improve the GT and Methodology?
11	Training should offer kind of mini exercises to learn how to use all DRIVER+ stuff. Influence of the Methodology on the Trial execution, after the Trial design (6-Steps). Feedback from Trials to Methodology for continuous improvement".
12	To get to know evaluation methods, techniques and tools we can use for evaluation of crises management, solution and Trial dimension. What KPI could be appropriate for the 3 dimensions incl. examples means defining the KPIs and show how to measure them in practice
13	Skills and possibility to know new solutions.
14	Once the training is provided going through the methodology using the tools should be quite straight forward.
15	Should be informative with lots of practical applications.

Learning preferences

	1 - Does not correspond at all	2 - Corresponds a little	3 - Corresponds moderately	4 - Corresponds exactly
Traditional lecturing/presentation	2	5	5	1
Problem solving oriented	0	1	2	10
Group works	0	6	3	4
Simulations/real life tests	0	4	2	7
Case studies	0	3	5	5
e-learning support/online learning	2	5	4	1
Independent work/study (take home assignments)	4	7		1
Combined: face-to-face and e-learning supported independent learning	2	2	3	5
Would you like to receive training material beforehand (like PP slides)	1	0	5	7

Comments on learning preferences

Free text comments from the responders:	
Traditional lecturing/presentation	<p>It needs to be adapted to the actual Trial needs. Highest learning effect / information input. It's hard to prepare a theoretical lecture/presentation on usage of available tools/solutions which could be utilized for crisis. It's difficult to evaluate the performance of such training (how attendees acquired the knowledge). Describing basics, including listing other deliverables from DRIVER+ that might be needed for this task. It is often boring and does not allow contact with other participants of the meeting.</p>
Problem solving oriented	<p>As a Trial owner I need to know how to solve problems I'm facing every day using the Trial Guidance Methodology. To focus on specific problems encountered during the Trial preparation. Most important for me as problems are Trial specific. It's tough to define a problem (which on one hand is generic enough to help getting a "bigger picture" and on the other specific enough to define proper solution path) and a right path to tackle it. Fostering the knowledge. Makes it possible to solve difficult tasks so far.</p>

Free text comments from the responders:	
Group works	<p>Looks like Trial committee meeting approach. I don't know if this will help me with the Trial lead. It's difficult to "write a screenplay" for the group, define the authority's division, tasks allocation and expected results. Making two abstract mini-Trials with: 1st very basic; 2nd more advanced, that houses a set of difficulties (e.g. solutions that are hard to address by performance indicators: e.g. COP/CIS). Learning by communicating in the group provides better understanding. Opportunity to exchange experiences, establish contacts.</p>
Simulations/real life tests	<p>Make it more concrete and realise test to check what's working and what's not. I don't know if this will help me with the Trial lead. Not needed. The best way to check something.</p>
Case studies	<p>The case studies should be fitted to each Trial. I don't know if this will help me with the Trial lead. The only thing that would be helpful is learning from the other Trials. Definition of case study which is as close to real situation as possible. Basing on lessons learned by SGSP during preparation of Trial 1. Provides better analysis of the problem. Brain storm, interesting ideas of different people.</p>
e-learning support/online learning	<p>It depends on the content. Interesting because time independent working possible. Difficult to conduct interactive training with multiple attendees on a solution without physical presence in a training room where all matters/issues might be easily addressed. Could be done from home-office – flexibility. Requires mobilization.</p>
Independent work/study (take home assignments)	<p>To me it looks like the exchanges that we have with the methodology support members of the Trial committee (for instance they ask us to draw research questions and we send them back our list and then they react). I don't know if this will help me with the Trial lead. How to take solution home? To find a RQ and evaluation approaches and KPI for every type of solution/tool that is in PoS or has been used in any of former DRIVER experiments. Support is always appreciated - knowing that you can ask. Someone is really good. Requires mobilization.</p>
Combined: face-to-face and e-learning supported independent learning	<p>This is the best and the most effective way to understand how TGM works. Both are probably needed. Would be a good mixture. YES. I think is one of the best options to learn, communicate and solve a problem.</p>
Would you like to receive training material beforehand (like PP slides)	<p>I think this would probably make it more efficient. This is always a good idea. YES. Yes. Initial familiarization with the topic is necessary.</p>

Most challenging phases and comments per phase

Ordering from the most challenging to the easiest one: Evaluation, preparation, Execution.
All, all phases (4).
We need support at all 3 phases. Now, the evaluation seems to be particularly challenging, but this is probably related to the fact that we are in an early design stage and not quite yet at the point where evaluation can be discussed in detail.
Preparation (2) and evaluation (2).
Evaluation, HOWEVER NOT DATA ANALYSIS but PREPARATION of the evaluation process (from initial arrangements, up to the readiness for the execution (after applying adjustments coming from rehearsals).

Training needs (free text) per TGM phase specified by the responders

Preparation phase
“Defining the KPIs for certain solutions. 3-dimension evaluation (Trial, CM, solutions) how to define KPIs for each dimension to be sure that they are corresponding to research questions”.
Technical testbed implementation (for the platform colleagues in VALABRE), scenario description, developing evaluation and data collection plan once our solutions are selected.
"Basics: TGM understanding, TAP application, project management. RQ, selecting proper KPI's for baffling types of tools (e.g. COP, CIS solutions). Running 6-step approach, especially: selecting RQ, evaluation approaches and KPI's". How to work with the tools (GT, etc...). What must be obeyed; What are the important chapters in the preparation phase. Who needs to be involved in the pre-organization?
Steps of scenario building.

Execution phase
"What methods use to collect data How plan the data collection to be sure that results from measurements will be relevant (minimize measurements error)".
"data collection methods and tools ensuring the smooth". “Most of Trial Owners is experienced in this area, therefore this is not a priority Set-up (devices, tools, infrastructure)”.
“Coordination and Communication Methodology observation - how is it addressed in the Trials”.
“Methods, techniques and tools for evaluation of solutions during the dr2 and Trial. KPIs - examples, definitions, how to collect data, measure and record them. how to ensure objectivity of measured KPIs (e.g. how organize two independent groups which are perceived the same quality when you want to make a Trial on the base of independent, but qualitatively the same, groups of practitioners)”.

Evaluation phase:

Evaluation phase:
<p>How to "transfer" results of evaluation from collected data (KPIs, qualitative and quantitative data) to each dimension of evaluation (especially CM), then to research questions answers and finally to gaps closing aspect.</p> <p>What and how should be measured during DR1, DR2 and Trial itself and what should be the acceptance thresholds.</p> <p>Secondary to preparation.</p>
<p>Data analysis methods - understanding the various dimension, i.e. solution assessment, Trial evaluation, testbed/ methodology evaluation and clarify partner's role in each of those.</p>
<p>What are the key things that need evaluation? Any general approach available in order not to forget or overlook something.</p>
<p>Methodology evaluation, aligned/individual with Trial evaluation.</p> <p>how to run an analysis on the base of the collected data to prove that a solution response a research question and how it covers a gap determining how many times and how to play the episode to be able to evaluate the result.</p>

Final tips and tricks

Comments:
<p>As a Trial owner I expect more examples of how to use each part of the methodology and templates which can be used for certain situation. Much less I expect the "storyline" description what methodology is, because I need to use it in a practical manner (exercise, laboratory experiment type not a lecture).</p>
<p>"My tip is: contact directly with Marcin Smolarkiewicz from Main School of Fire Service and hear his expectations on what an ""ideal Trial Guidance Methodology"" should offer to End-User (future organizer of exercise, who wants to do it by-the-book, however have no scientific / academic background.)".</p>
<p>DEFINE TGM BENEFICIARIES after DRIVER+ project and address training accordingly."</p>
<p>Let's talk in Tallinn :)</p>
<p>The scientific approach is not useful for organizing exercises in the field of crisis management. It extends the time and provides a lot of conversations that do not lead to specific arrangements. I organized exercises more quickly without a scientific approach and methodology.</p>
<p>"It is required to have two months between the selection of solutions and DR1. It is required to have two months between DR1 and DR2. The different aspects of the interaction with external solution providers have to be considered before the selection process."</p>