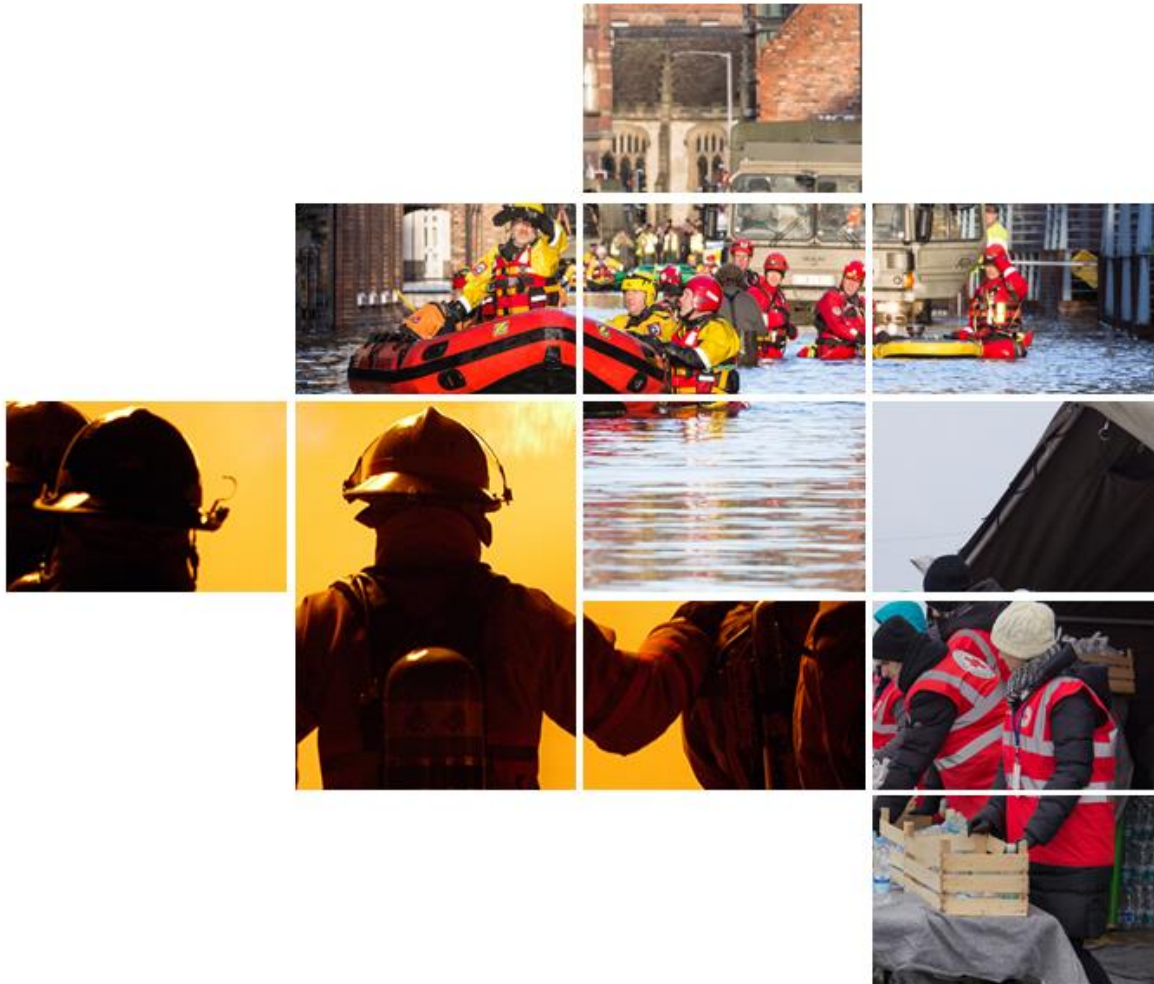




Driving Innovation in Crisis Management
for European Resilience



D924.12 - MATERIALS FOR THE TRAINING MODULE II

SP92 - TEST-BED

FEBRUARY 2019 (M58)



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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:

- 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.
- 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.
- 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 (FD). **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 standardisation.

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 final version of the DRIVER+ Training Module (TM) and the rationale behind this design. In M66 (October, 2019), the final TM will be delivered hand-in-hand with the final Trial Guidance Methodology (TGM) Handbook and the Trial Guidance Tool (TGT), thereby providing a description of the pan-European Test-bed, a training how to use all methods, tools and user network of this Test-bed best and a tool guiding users through the process of preparing, executing and evaluating their own realistic, structured Trial in an objective, data-driven manner.

The TM's design is based on the feedback received on earlier conducted training activities (e.g. TM version 2 delivered in October-November 2018), TGM support provided to the project's Trials 1-4, critical reflection by the TM working group members and interviews with project-external education experts and with practitioners who have attended CM courses. In total, excluding the TM working group, approximately 35 persons have given their feedback. This led to concrete suggestions for improvements, such as a modular, role-based e-learning (i.e. different sections advised depending on the learner's role in Trial organisation), shorter and more interactive e-learning sections divided in basic and advanced parts, a tailored contact-phase extensively facilitated by instructors who have completed a train-the-trainer course, full consistency with explanations and terminology in the TGM Handbook, and suggestions regarding sustainability and feasibility of the TM after the project's end-date (e.g. findability, promotion, cost coverage and implementation advice). This feedback, together with progressions in the TGM development and its Handbook, leads to an improved design of the final TM, compared to its previous version 1 (**D924.11**).

The primary target group of the TM are organisers of future Trials, such as experienced and/or high-level Crisis Management (CM) professionals, policy makers, procurement officers and researchers. The TM also targets a secondary group of learners, namely CM practitioners, solution providers, technicians and developers involved in specific steps of organizing and/or running a Trial. The TM provides both groups with explanations, training, practice and assessments in the three phases of the TGM, the supportive tools and methods (e.g. the TGT, the technical infrastructure and how to draw a base-line and innovation line). In addition, it makes references to other users of the Test-bed, such as the members of the Crisis Management Innovation Network Europe (CMINE) and potential Centres of Expertise (CoE) who will deliver the services developed within DRIVER+ after the project duration.

The TM will use a blended approach to facilitate a feasible and effective learning strategy that can be partly tailored to fit the needs of a specific (mixed) group of learners. This means that the TM contains a self-directed e-learning phase, followed by a face-to-face or web-based instructor-led contact-phase providing more instruction, practice, guidance and feedback in those sessions where the Test-bed is most innovative and/or differs most from organizing other type of activities, like exercises.

A (reference) implementation of the TM will be delivered in M66, most probably using EASS's learner administration system and e-learning platform Moodle. To support the TM's sustainability after the project's end, not only this TM content and the reference implementation thereof will be delivered; a full training package will be developed, which can be implemented at the potential CoEs. More implementations would result in a better coverage and findability of the Test-bed and its TM throughout Europe. In addition to the training contents, the full package consists of the content's source files and instructor notes, manuals how to implement, tailor and update them and a train-the-trainer program facilitating the creation of a pool of TM instructors. Furthermore, it is recommended to establish a Test-bed steering committee, that can manage future updates of the Test-bed and thus of the TM.

In the coming period of the project (up to M66), the TM's contents will be developed, reviewed and finalized, together with the other parts of the training package, harmonized with the TGM Handbook finalization. The TM's sustainability aspects will be taken along in the broader sustainability work within the project. Furthermore, implementations of the TM at other potential CoEs will be investigated.

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List of Acronyms (ALL)

Acronym	Definition
BPMN	Business Process Modelling Notation
CM	Crisis Management
CMINE	Crisis Management Innovation Network Europe
CoE	Centre of Expertise
DR1 / DR2	Dry Run 1 / 2
ECTS	European Academic Credit Transfer System
ELSI	Ethical, Legal and Social Issues
EQF	European Qualifications Framework
EUCPM	European Union Civil Protection Mechanism
EU GDPR	EU General Data Protection Regulation
KPI	Key Performance Indicator
LL	Lessons Learned
LMS	Learning Management System (e-learning support)
LCMS	Learning Content Management System
PoS	Portfolio of Solutions
RPL	Recognition of Prior Learning
SIA	Societal Impact Assessments
SQF	Sectorial Qualification Framework (occupational standard)
TAP	Trial Action Plan
TGM	Trial Guidance Methodology
TGT	Trial Guidance Tool
TIM	Trial Integration Meeting
TM	Training Module
TNA	Training Needs Analysis

1. Introduction

In October 2019 (M66) the final version of the DRIVER+ pan-European Test-bed will be delivered, being documented in the final version of the Trial Guidance Methodology (TGM) Handbook (i.e. **D922.41 (1)**). The core objective of this deliverable is that persons throughout Europe, both from within and outside the DRIVER+ consortium and particularly Crisis Management professionals, can organize their own Trials and benefit from the results of these Trials. The TGM Handbook will be accompanied by the Trial Guidance Tool (TGT) and a Training Module (TM), so future Trial organizers not only have a document to consult and a tool guiding them through the methodology, but can also attend a training course instructing them what the Test-bed offers and how it can be used to best fit their needs.

This report **D924.12 Materials for the Training Module II** contains the design of the final TM and the design rationale behind it. It is important to note that this document does not contain the exact training contents of the final TM, but only the descriptive designs of these. In fact, the training content itself cannot be documented in a report like this, as the design of the final TM is highly visual (e.g. video animations), interactive (e.g. quizzes as well individual and group assignments) and partly tailored to specific groups of persons attending the TM (i.e. learners¹). Converting it into a written text and images would destroy its interactive, tailored and contemporary nature and would specifically reduce the multi-directional, dynamic, instructor-led sessions into static, one-directional knowledge-transfer without any opportunity for practice and assessment of the learning outcomes. Next to this, delivering in M58 a well-thought-through design of the final TM, enables the final TGM Handbook and the final TM to be delivered hand-in-hand on the same date (M66) and be fully consistent in structure, terminology and visuals.

As the TM's main objective is to train organizers, facilitators and other stakeholders of future Trials, the TM's design is especially focussed on its sustainability after the end of the DRIVER+ project. That means that particular attention is paid to:

- Feedback received from both within and outside the project consortium about previous delivered training activities (see also Annex 2).
- Lessons identified from TGM support to Trials organized within the project.
- Feedback from CM practitioners who have attended other international courses, specifically courses from the UNOCHA and the European Union's Civil Protection Mechanism (EUCPM).

A summary of this feedback, together with the conclusions drawn from this, like the TM's target groups and their training needs, is documented in section 3. Section 2 first explains the overall structure of the final TM. Section 4 contains the detailed designs of the final TM, by documenting in a structured way the learning objectives and selected learning strategies of each (sub-)session. To get a tangible idea about how the TM will look like, especially the e-learning part, readers are referred to Annex 2 providing user credentials to open up the previously delivered TM version 2.

To assure that the final TM will be used after the project and will remain valuable and up-to-date, delivery of the TM will not only consist of the (reference) implementation of its contents. The delivery will be that of an entire training package, which can be implemented at multiple locations (e.g. at the envisioned DRIVER+ Centres of Expertise), and can be maintained and updated. These sustainability aspects are described in section 5.

¹ In the context of e-learning and general education the terms "trainee" or "student" are often used to indicate the persons participating in a training course. In this document however, the term "learner" is used to refer to those persons attending the TM, because "learner" is seen as more neutral to indicate the wide range of (high-level) CM professionals the TM is targeted at.

The final section 6 provides an overview of the planning to create, review, finalize and implement the full TM package in the coming period up to M66 (October 2019). It also provides an overview of the links and interdependencies between the task **T924.1** in developing the final TM and other work-packages and activities within the DRIVER+ project.

This document is targeted at readers with an interest in how the pan-European DRIVER+ Test-bed will be explained to potential future Trial organizers and other stakeholders (e.g. developers or hardware technicians of a solution being trialled). This Test-bed consists of the TGM, the technical infrastructure, supportive tools and methods, and networks of organizations and persons using these. Readers are expected to have at least a basic understanding of the DRIVER+ objectives, the TGM and its supportive tools and methods, as well as a generic level of knowledge or experience in Crisis Management. Furthermore, readers should have a basic understanding of didactics and experience with IT-based education and training methods (e.g. having followed an e-learning module, or having similar experiences in (international) training courses).

2. Overall structure of the final Training Module

The aim and purpose of the Training Module (TM) is to train and instruct the learners in how to make best use of the pan-European DRIVER+ Test-bed for their own Trials, meaning applying the DRIVER+ Trial Guidance Methodology (TGM), using the supportive methods and tools, and making reference to the pan-European network it is envisioned to be part of. After completion of the TM, learners should be able to prepare, execute and evaluate a high-quality Trial themselves, potentially but not necessarily with support from DRIVER+ Centres of Expertise (CoE). These Trials can be small-scale (e.g. only one type of socio-technical solution) or rather complex (e.g. assessing multiple solutions in a cross-border context).

This section provides a concise overview of the overall structure of the Training Module and the design rationale behind it. It provides the main objectives of the TM, its training target groups, the main learning methods applied and the structure of both the e-learning and the contact-phase. In the final version, these training contents will be accompanied by extra documentation, such as instructor and implementation manuals, thereby making the final TM a total training package delivery.

The TM is aimed at two types of future Test-bed users (i.e. the TM's learners). The primary target group of the TM are organisers of future Trials, such as experienced and/or high-level Crisis Management (CM) professionals, policy makers, procurement officers and researchers. For the CM professionals, references are made to CM exercises – while highlighting where a Trial differs from an exercise – as organizing and participating in exercises has proved to be a good frame of reference for them.² The TM also targets a secondary group of learners, namely CM practitioners (e.g. participating as player or observer in a Trial), solution providers (i.e. who's solutions are being trialled) and technicians and developers involved in specific steps of organizing and/or running a Trial (e.g. training developers, hardware technicians or software developers). A more detailed overview is presented in section 3.2.

The final TM follows a blended approach, meaning that it will consist of both an e-learning part and an instructor-led contact-phase. The main rationale behind it is:

- E-learning provides learners with the ability to learn at the time and place suitable for them.
- Providing a lot of content via e-learning is efficient for instructors and learners, as they then only need to travel for the contact-phase.
- Commencing with e-learning assures that participants enter the contact-phase with the same, already quite high level of understanding the Test-bed.
- A contact-phase is envisioned to be still needed, because some topics cannot be trained sufficiently from a distance, electronic or with webinars. Some topics call for discussions or peer reviews, which require a setting with learners and instructors meeting each other in the same physical room.
- While the e-learning is mainly an individual type of learning, the contact-phase also provides the ability for learners to learn from each other, which is highly appreciated according to feedback received.

² Just like in an exercise, a Trial is executed using a simulated incident/crisis. Therefore, in organizing or participating in a Trial, a lot of practical steps are much alike organizing or participating in an exercise. In support to Trials 1-4, it proved to be very effective to tap into this experience of CM professionals. However, those aspects where a Trial differs from an exercise are seen as most innovative and thus requiring training effort. Namely, while the evaluation of an exercise is aimed at assessing the participants and their learning, the evaluation of a Trial is aimed at assessing the innovation power of solutions, not the participants.

The structure of the TM goes hand-in-hand with the structure of the TGM Handbook. The TGM Handbook enables one-directional information transfer only but is an important source of information for learners and reading it can thus be considered a part of the training as well. The TM will provide additional information with clarifying assignments and a user-story with direct links to steps of the TGM. The e-learning is mostly automatic with clear content based on the learner's profile. The contact-phase is a collection of TGM-expert-led sessions, which can be tailored according to the training needs of a specific group of learners (i.e. homogenous or with mixed backgrounds and belonging to several target groups).

Table 2.1: Structure of the final Training Module

Session	E-learning phase	Contact-phase
Session 1: Introduction	✓	
Session 2: Preparation phase		
2.1 Step 0	✓	
2.2 Six-step approach	✓	✓
2.3. How to iterate and set-up the infrastructure	✓	
Session 3: Execution phase		
3.1: Trial execution	✓	
3.2: Transition from preparation to execution: TIM	✓	✓
3.3: What to be tested in Dry Run 1 and 2	✓	
Session 4: Evaluation phase		
4.1: Data quality check	✓	✓
4.2: Data analysis	✓	✓
4.3: Data synthesis	✓	✓
4.4: Dissemination of results	✓	✓
Session 5: Supportive tools and methods		
5.1: Trial Guidance Tool and Trial Action Plan	✓	
5.2: Test-bed Infrastructure	✓	
5.3: CM gap assessment and gap selection methods	✓	
5.4: Base-line and Innovation-line	✓	✓
5.5: Societal Impact Assessment	✓	✓
5.6: Lessons Learned Framework	✓	
Session 6: Pan-European networks and references		
6.1: Networks: CoE, CMINE and Community of Users	✓	
6.2: Glossary and CM taxonomy	✓	
6.3 Portfolio of Solutions	✓	

The TM is divided in multiple sessions, each with a specific topic (e.g. a phase of the TGM, or a supportive tool). Especially the sessions about the TGM's phases are divided in sub-sessions, mainly to prevent information overload in one single session, and thereby better facilitating learners in self-scheduling his/her training activities. The structure of the TM is depicted in Table 2.1, listing the e-learning (sub-)sessions and whether learners can also attend a tailor-made contact-phase activity about that sub-session.

To facilitate that the TM can be implemented at one or multiple DRIVER+ CoE³, the TM to be developed does not only consist of the training content, but in fact provides an entire package supporting engineers and administrative staff. A more detailed description of this total package can be found in section 5.

³ The structure of DRIVER+ Centres of Expertise is still work in progress. This concerns more than just the implementation of the TM, and is therefore not further elaborated on in this deliverable. To provide input to this debate and for ease of reading of this deliverable, in this document the assumption is made that one or more organisations are willing to act as a DRIVER+ CoE implementing at least the TM.

3. Learner driven development considerations

This section focusses on who to train (i.e. the learners / the training target groups), what they need to learn (i.e. the training needs per target group) and which methods are foreseen to be most effective to train these needs (i.e. the training delivery methods). These core decisions in the design of the final TM are based on feedback received on previous versions of the TM and on a check of (un)successful training methods in other international courses, especially in EUCPM and UNDAC courses as these are - to a large extent - aimed at similar target groups as the TM. This feedback is presented first in section 3.1. The TM's target groups, their training needs and the available methods to deliver this training are thereafter described in sections 3.2 - 3.4.

3.1. Feedback on previous training activities

This section presents and discusses the key findings of the feedback received on earlier delivered versions of the TM. It is structured based on content and methods used in delivering the training and other support activities. Feedback was received from about 45 different people and from several sources:

- During TGM support to the Trial Committees (see specifically section 3.1.2).
- From participants of TMv2 via the e-learning platform Moodle.
- During the TMv2 contact-phase, conducted at the Updated Workshop 0 (7-8 November 2018, The Hague, the Netherlands).
- From practitioners included in the project consortium;
- From face-to-face as well as from teleconference meetings with different education specialists from partner organizations.

Feedback was received from people inside and outside the project, both during personal conversations, group discussions and (anonymous) questionnaires. Annex 3 contains the list of persons who provided feedback.

3.1.1. Feedback on TM version 2

A summarized overview of the feedback received can be found in this section, combined with solutions for these as selected by the TM working group. These summaries are based on a more detailed overview of all feedback received, which is included in Annex 3. The feedback received is divided into three different sections: general, e-learning and contact-phase feedback.

General feedback

The following general feedback was provided:

- Difficult and time-consuming registration process at EASS's Moodle platform.
- Who will moderate the e-learning after the project has ended?
- The "one-size-fits-all" design does not work.
- TGM sections and TM sections do not go hand-in-hand and should have links between them.
- Provide a consistent user-story and repeat the "heart-beat" of the methodology, being that a structured evaluation is key.

In line with this feedback, the following solutions and design decisions have been made

- For the final version of the TM, an e-learning platform such as Moodle should be used. Although it is currently not designed for international courses and registration is time-consuming, it is at this point in time the best option. For the sustainability of the TM the e-learning should be transferred to a more suitable platform implemented and maintained by each CoE.

- To improve the sustainability, the TM should be as automatic as possible, with automatic-interactive presentations as well as giving automatic feedback to assignments. This means that the learners need technical support and that the learning environment itself should be maintained. Therefore there should be some kind of helpdesk available offering technical support.
- The final version of the TM is role dependent. The learners will be given a suggested list of topics to be studied, based on their involvement in organizing a Trial (i.e. learner's profile). In addition, all the sessions as well as the content will be aligned and linked with the TGM Handbook.
- The decision to use a blended approach for the TM is supported. The contact-phase was experienced as positive and needed. Only providing a contact-phase is envisioned to be inefficient and requiring time investments not feasible for future Test-bed users.
- Videos are a way to emphasise and repeat the "heart-beat" of the TGM methodology in the training, being that the main aim of a Trial is to assess the solution and therefore a structured preparation and evaluation are key. To illustrate and explain the TGM, a user-story will be developed based on all collected experience, data, information and lessons identified until now in the project.

E-learning feedback

The following feedback for the e-learning was provided:

- TM itself is too long.
- Videos and presentations are too long.
- Not enough interactivity and differences in quality.

In line with this feedback, the following solutions and design decisions have been made:

- The final version of the e-learning and contact-phase will be shorter. Firstly, due to role-dependent e-learning, a learner does not need to follow all parts. Secondly, there will be shorter videos (max 10-15 minutes) and interactive presentations with voice-overs; modern lecture-style video will be made explaining the core methodological steps in this phase.
- In the final version of the e-learning more attention will be given to assignments providing learners with automatic feedback. All the assignments will be standardized and more difficult. Forums will be left up and running as they provide excellent functionalities to contact other learners and instructors. Other Trial organizers and CoEs should be promoted and contact-details to these should be listed.

Contact-phase feedback

The following feedback for the contact-phase was provided:

- Who will be the trainer and how will the contact-phase be implemented?
- Will all the learners have to take part in the contact-phase?

In line with this feedback, the following solutions and design decisions have been made:

- The TM and especially the contact-phase will need to be instructor-led by TGM- and tool-experts. A CoE, being the service provider of the DRIVER+ Test-bed, should provide these instructors. A detailed tutorial of the structure as well as the content and assignments should be developed. The content of the contact-phase will only focus on topics that need more face-to-face clarification and practice opportunities. Tailoring of this content-phase needs to be done based on the results of the learners in the e-learning.
- The final version of the TM will be role-based. This means that not all learners will have to go through the whole content, but only through the material that is needed based on the learner's profile and thus on their specific role in the organization of a Trial.

3.1.2. TGM support diary

Within DRIVER+ it was agreed to have the first version of the Training Module executed as a more bi-lateral and needs-driven process. Following this, mainly Trial 1 and 2, but also 3 and 4 in their preliminary stages, got on-demand support. Proven very useful, this support will also go on within the project lifetime as a supplement to the Training Module.

In order to capture the needs as they presented themselves either as questions by the Trial Committees or as identified demand by the TGM support, the TGM support diary was created and subsequently filled. This simple Excel file was filled in by the methodological support team every time support was requested or given. All in all there are different fields to fill in:

- No. → Consecutive number.
- Date → When the support was given.
- Trial # → The number of the Trial (as they are very different).
- Support category → Parts of the TGM, like evaluation, KPIs or Trial in general.
- Main results → What was done immediately to meet the expressed need.
- Related document → If indicated. This can be the TAP or a deliverable.
- Actions → What are next steps to address the expressed need.
- Supported by → Shortcut of the TGM supports name (so it is clear, whom to ask, if another team member takes over).
- Resources → Number of persons and type of tools.
- Duration → In days (if it was a dedicated meeting) or minutes.
- Initiated by → As expressed above the need can be seen from different perspectives.

While the analyses towards the conclusion for the TGM development are in **D922.41** (1), in this document the results for the Training Module will be presented.

The support categories can be grouped in the following five main parts: 1) creating the baselines and innovation-lines, 2) data collection & KPIs, 3) utilization of the technical Test-bed infrastructure, 4) evaluation & results analysis, 5) solutions (i.e. selection, use in Trials, integration into the scenario). This shows that the main needs are expressed concerning support for the preparation and evaluation phases, including their inter-relations. As these steps of the TGM are crucial, it is only natural that issues emerge here most. These five categories will be briefly explained.

1) Baseline and innovation-line: As these two artefacts were not initially mentioned in the first version of the TGM deliverable, the need for support in this regards was expected. From the practical needs experienced in this regard it can be said, that an overall introduction into the concept and its value has to be added. Furthermore some process modelling methods (Swimming lanes, BPMN, etc.) that can be used for creating those artefacts need to be described.

2) Data collection & KPIs are the core of the TGM and DRIVER+, as the project itself aims at an objective assessment of socio-technical innovation. The support in this area was and is focused on the very concept of data (e.g. qualitative vs. quantitative) and the means by which they can be collected (technical Test-bed, observation, focus group). As this is not part of a CM practitioner's daily work, more tailored explanations in this area will be taken up in the TM.

3) Utilization of the technical Test-bed infrastructure. The Test-bed's technical infrastructure is one of the main artefacts that have a direct implication on the Trial. From the simulation possibilities, to the connectedness of different solutions and their exchange of data, to the realism of the Trials and to the data collection and evaluation aspects, the technical infrastructure of the Test-bed is involved everywhere. Hence a lot of knowledge has to be transferred to the user. It is important to explain the whole range of possibilities the technical Test-bed offers but also to convey the potential implications. For example, the

coverage with Wi-Fi can be crucial for some solutions and their connection but also for the Observer Support Tool.

4) Evaluation & results analysis. This is also not part of a CM practitioner's daily work and hence some basic knowledge on evaluation as well as analysis methods needs to be taught to the users of the Training Module.

5) Solutions (selection, use in Trials, integration into the scenario). The objective assessment of innovative solutions is the very core of a Trial. Choosing the most promising solutions, connecting them to the technical Test-bed (as much as needed) and embedding them in a realistic scenario is key. A detailed analysis of the solution selection process within DRIVER+ can be found in **D942.11 Report on review and selection process** (2). From the supporting activities, it can already be seen that the core information that has to be conveyed is still the one of the objective solution assessment with respect to reference data.

3.1.3. Feedback from practitioners regarding training delivery methods

Feedback was collected from 4 practitioners from The Netherlands, Austria and Estonia with some or little knowledge of DRIVER+. These CM practitioners, having attended international training modules (e.g. at UNOCHA or within the EUCPM), were interviewed in order to receive feedback on the best training delivery methods.

E-learning is used in many different organizations for online courses. Often this e-learning is followed by a face-to-face contact-phase (e.g. called "residential course"). These main implementation suggestions were mentioned by the practitioners:

- Start with an online virtual classroom with all participants to share expectations and experiences.
- Make the e-learning as visual as possible (videos, photos, characters).
- Combine theory and practice.
- E-learning should be obligatory before the contact-phase.
- Good feedback with a follow-up in the contact-session.
- Good guidance by experienced instructors is essential to have good training effectiveness in the contact-phase.
- E-learning should be on a universal platform and easy to access.
- The contact-phase should have a good balance between interactive working methods and presentations.

Regarding the implementation of the training module, the following was suggested:

- Hosting, delivery, maintenance and updates could be managed by a new consortium.
- Commercial aspects are not appreciated by the CM sector, as making profit out of these activities for societal benefits is not regarded as justified.
- The TM could be implemented specifically aimed at one country.
- Would be great if the TM is delivered in the native-language of the learner, but as this is highly unlikely to happen, it could also be provided in the 4-5 main European languages.

In conclusion, some of these suggestions have resulted in rather major design alterations with respect to the previous TM version. The main idea is to provide a training module as user- and learner-friendly as possible (i.e. also user-friendly for instructors having to use and update the TM's contents).

3.2. The training target groups

The TM should train learners in what the Test-bed contains, how it should be used and provide suggestions for how to use it best. The contents of the Test-bed (mainly the TGM, but also the pan-European network and the technical Test-bed infrastructure with its supportive tools and methods) are described in the TGM

Handbook (**D922.41** (1)). The final TM should therefore go hand-in-hand with the TGM Handbook (e.g. fully consistent wording and delivered simultaneously) and should therefore target the same audiences, namely the future users of (parts of) the Test-bed.

Hence, one can distinguish two main training target groups:

1. **Trial organisers**, being the **TM's primary training** audience, who could be employed as:
 - **High-level crisis managers** – as they have first-hand experience in encountering CM gaps directly, or to experience the cascading effects or lessons identified of these gaps. They also are in a strategic position to trigger a process to search for a solution for these gaps. Therefore they are the most logical spot to kick-start a project to organize a Trial. To able to run this well, they should have a good understanding of the TGM and how to best work with it (in a team).
 - **Senior CM field practitioners** – as they have multiple years of experience working in the field and/or in command/coordination centres, they have first-hand experience in current CM gaps, especially at the operational level. As such they are foreseen to be a logical spot at which the concept of a Trial emerges (e.g. “We often experience issues A or B in these types of incidents: can't we try out how to solve this best?”). Therefore, they need to be able to use the TGM fully, or at minimal to participate as practitioner expert in the committee organizing a Trial.
 - **CM policy makers** – because they are involved in the development of new policies, often requiring the implementation of new socio-technological solutions and requiring an assessment of new policies and solutions piloted/implemented. Therefore, they need to understand the concept of a Trial and be able to (manage a team to) follow the TGM.
 - **CM procurement officers** – because they could use the TGM as objective assessment method for new socio-technological solutions to acquire. Therefore, they need to understand the objective character of Trials and the TGM and how to apply this in their procurement processes.
 - **CM innovators** – being other people involved in innovation of CM and usually working within a CM organisation, their job is to chase CM innovation. To assess the success of these innovations, all aspects of the Test-bed are most useful for them. To implement and use it well, they should have a full understanding of the Test-bed.
 - **Researchers in the field of CM** – as these are working on their independent research in current issues in CM and innovations to solve these, or because they can be involved by a CM organisation to assist them in innovation research. They should therefore have a full understanding especially of the TGM and supportive tools and methods. Because of their research background, they probably have or should be drawn to different focus areas within the TM.
 - **Consultants in the field of CM** - because they can be involved by a CM organisation to assist them in innovation assessment, for instance as data analyst, evaluation expert or as toolset implementer. These persons can be found to work at public research organisations, commercial consultancy companies or a CoE. Dependent on the expertise for which they are hired, they need to be able to use certain aspects of the Test-bed (e.g. to prepare and execute the evaluation approach, or to select and implement simulations required to run a realistic Trial scenario).

Next to this primary target group, there are also **other stakeholders in a Trial**, who are the **TM's secondary training target groups**:

2. **Practitioners (not being the main Trial organizers)** – because they are needed as players during the Trial runs and/or as observers. Therefore they must understand what a Trial is and particularly what is expected from them to play or observe during a Trial run.

3. **Solution providers** – because their solution is being trialled. Therefore they must have a good understanding of what a Trial is, have a basic understanding of the TGM, and must understand the process to prepare, execute and evaluate a Trial well such that they can cooperate effectively. In addition, this enables them to better provide suggestions on how to best assess the performance of their solution during a Trial.
4. **Developers and technicians** (for any kind of socio-technical solution) – because they are needed to organize a Trial, they must have a basic understanding of what a Trial is and the TGM, and they must have in-depth understanding of what the technical infrastructure can bring them, how to implement it and of the technical and logistical preparation processes. Note that they can work for solution providers, but also for CM organisations hosting a Trial or a CoE supporting the Trial.

3.3. Training needs per target group

It can be concluded from the former section that the target groups are heterogeneous. Different learners are probably interested in different aspects of the Test-bed. And according to their different roles in organizing a Trial, their training should be focussed on different (sub-)sessions of the Training Module. Table 3.1 and Table 3.2 provide an overview of which sessions of the e-learning and contact-phase respectively are aimed at which target group. The contents of each (sub-) session are described in more detail in section 4. The tables in this section are using the following two symbols:

- ✓ Learners are strongly advised to focus well on this (sub-)session. At least the basic part should be completed. Advanced parts can be followed to further deepen the understanding and ability to use the Test-bed, according to the learner's role in organizing a Trial or to his/her own interests (e.g. a CM policy maker acting as Evaluation Coordinator would focus specifically on Session 2.2: six-step approach and Session 4: Evaluation phase).
- ✓ Learners are suggested to review the basic part of this sub-session. In their role in organizing a Trial, they do not have to actively perform these steps or use these methods or tools, but their work will be related to this. Therefore it is good to have a basic understanding of this (e.g. the developers and solution providers are part of creating the innovation-line, possibly get connected to the technical Test-bed and must enable data collection, hence they should also know the basics about the TGM and Trials).

Note that when cells are left empty, this does not mean learners are discouraged to look at these sub-sessions. On the contrary, every learner interested in (participating to) the preparation, execution and/or evaluation of a Trial should be able to complete all basic and advanced parts of all sessions if he or she is curious about its contents.

Table 3.1: Overview target groups and their advised e-learning sessions

E-learning session	1. Trial organisers	2. Practitioners	3. Solution providers	4. Developers and technicians
Session 1: Introduction	✓	✓	✓	✓
Session 2: Preparation phase				
2.1 Step 0	✓	✓	✓	✓
2.2 Six-step approach	✓	✓	✓	✓
2.3. How to iterate and set-up of the infrastructure	✓	✓	✓	✓
Session 3: Execution phase				
3.1: Trial execution	✓	✓	✓	✓
3.2: Transition from preparation to execution: TIM	✓	✓	✓	✓
3.3: Trial rehearsals in Dry Run 1 and 2	✓	✓	✓	✓
Session 4: Evaluation phase				
4.1: Data quality check	✓	✓	✓	✓
4.2: Data analysis	✓	✓	✓	
4.3: Data synthesis	✓	✓	✓	
4.4: Dissemination of results	✓	✓	✓	
Session 5: Supportive tools and methods				
5.1: Trial Guidance Tool and Trial Action Plan	✓			
5.2: Test-bed Infrastructure	✓		✓	✓
5.3: CM gap assessment and gap selection methods	✓	✓		
5.4: Base-line and Innovation-line	✓	✓	✓	
5.5: Societal Impact Assessments	✓		✓	
5.6: Lessons Learned Framework	✓	✓		✓
Session 6: Pan-European networks and references				
6.1: Networks: CoE, CMINE and Community of Users	✓	✓	✓	✓
6.2: Glossary and CM taxonomy	✓	✓	✓	✓
6.3 Portfolio of Solutions	✓	✓	✓	✓

Table 3.2: Overview target groups and their advised contact-phase sessions

Contact-phase session	1. Trial organisers	2. Practitioners	3. Solution providers	4. Developers and technicians
Session 2.2: Six-step approach	✓	✓		
Session 3.2: Transition from preparation to execution: TIM	✓	✓	✓	✓
Session 4: Evaluation phase (i.e. sub-sessions 4.1-4.4)	✓		✓	
Session 5.4: Drawing a Base-line and Innovation-line	✓	✓	✓	
Session 5.5: Societal Impact Assessments	✓		✓	

As can be seen in Table 3.2, all contact-phase sessions are primarily aimed at the primary target group of Trial organisers. Mainly, because these sessions are intended to further deepen the understanding of specific steps in organizing a Trial and providing practice (e.g. via group assignment) such that the learners feel comfortable afterwards in executing these steps themselves.

The contact-phase sessions are designed to be tailored to the personal expertise and training needs of a specific group of learners. Therefore, just like in the e-learning, empty cells in this table do not mean an exclusion of target groups. If secondary target groups feel a need and are motivated to attend one or more contact-phase sessions, this should be encouraged by providing a tailored training program.

3.4. Selected training delivery methods

Because of the heterogeneous training target groups and the different needs they each have (see previous sections 3.2 and 3.3), the final TM will use a blended approach, just like the previously delivered TM version 2. This section will further detail out this blended approach and why it was chosen. It will also list the training delivery methods foreseen effective and feasible for the TM's target groups, and how an exemplary user-story and other examples will be used throughout the TM's sessions to illustrate the use of the Test-bed.

3.4.1. Blended approach

Using a blended approach means that the TM will consist of both an e-learning phase, followed by a face-to-face (or potentially webinar) instructor-led contact-phase. The e-learning part is used to convey knowledge, create comprehension (i.e. learners not only knowing about a certain topic, but also able to explain it to others) and facilitate a basic level of analysis and synthesis capabilities via interactive assignments (for instance, the ability to select and detail out those CM gaps applicable to a Trial in the learner's own CM organisation). The contact-phase will further build on the e-learning by providing more (group) assignments to improve the analysis and synthesis capabilities. For instance, this can be a multi-disciplinary group assignment to work out and critically reflect on research questions, in which a TGM expert facilitates this assignment and provides expert advice and feedback.

The TM provides skill based learning in order to enhance transfer of learning, meaning that learners after completion of the TM can in principle organize a Trial themselves, independently or with a support from CoE experts. To develop these skills, not only knowledge-transfer is needed, but learners should also have the ability to practice these skills and critically reflect on their performance and even have their performance assessed by the expert instructors. Although this requires instructor manpower for every contact-phase course, this investment is deemed valuable as especially for the more complex methodological steps in the TGM, a face-to-face contact-phase is regarded as the best method for practice, reflection and assessment.

Learners should first complete those parts of the e-learning aimed at their future role (e.g. Trial organiser, evaluation consultant or solution developer). The succeeding contact-phase is set-up in a modular fashion, such that the modules applicable to a specific group of learners can be selected and tailored to fit the needs of this group best (e.g. for a group of new TGM experts at a CoE, or a group of developers employed at several solution providers).

This blended approach was also used for the TM version 2, because of the conclusions drawn from an initial training needs analysis and experience of educational project partners in other curricula. This is described in **D924.11** (3). As the feedback on this approach was again positive, both from learners and TGM experts (see also section3.1), it was decided to keep the same concept of a blended approach for the final TM.

3.4.2. Available training delivery methods

Based on the choice for a blended approach, the profiles of the training audiences and feasibility within and after the project, several training delivery methods are foreseen to be suitable for the final TM. This section provides a summarizing overview of these methods. For more elaborate descriptions - including advantages, disadvantages implementation options/concerns – the reader is referred to Annex 4 – Training delivery methods suitable for the final TM. Which method is selected for which topic is explained in the designs documented in section 4.

For e-learning:

- **Video** – Short video clip, usually <10 min., fit for introducing a topic or providing an example in a very appealing method via 1-directional knowledge transfer.
- **E-lecture** – Video recording of a (real) lecture by 1 or two presenters, intended for explaining a topic in a basic up to very detailed level (i.e. 1-directional knowledge transfer).
- **Presenter slides with voice-over** – similar as e-lecture, but without a video capture of the presenter. Usually containing a scripted, professional voice-over.
- **Video interviews** – a scripted video of 5-30 minutes between interviewer and one or more persons being an expert or having first-hand experience in the topic to be trained. Often used to convey example cases via 1-directional knowledge and experience transfer.
- **Explanimation** - animated video providing a very appealing, concise explanation of a topic via 1-directional knowledge transfer.
- **Tutorial videos** – (screen capture) videos with voice-over for explaining how to use physical products and software applications and for providing a step-by-step guide to resolve issues with these (i.e. 1-directional practical ability-transfer).
- **Checklists, user manuals and other written and visual documentation** –providing written explanations (i.e. 1-directional knowledge transfer) and for providing reference to more advanced topics or to topics/tools/methods used less often.
- **Quizzes and tests** – come in the form of a single question up to a full list of questions to answer, thereby to check the level of knowledge or ability transfer. Providing direct, automatic feedback.
- **Individual assignment** – complex question/assignment than possible via a quiz, usually graded by an instructor (i.e. human-in-the-loop grading system).

- **Take-home assignment** – similar to individual assignments, but intended for more complex tasks requiring a learner more than 5 minutes to complete. Instructors also need considerable time to grade the submitted answers/reports.
- **Discussion forum** – communication medium for sharing questions, answers, practical advices, submitted (take-home) assignment and feedback amongst learners and between learners and instructors.
- **Achievements** – awards granted to learners to mark progression in the e-learning, indicating level of knowledge and ability transfer and for motivating learners.

For the contact-phase:

- **Presentation or lecture** – similar to e-lectures provided via e-learning, but in this case with instructor being face-to-face with learners. In the core being 1-directional knowledge transfer.
- **Question & answer session (Q&A)** – a face-to-face session between learners and an instructor fit for providing tailored answers to questions that have arisen at learners.
- **Checklists, manuals, leaflets and other documentation** – completely similar to these types of documentation provided via e-learning.
- **Individual assignment** – similar to individual assignment provided via e-learning.
- **Group assignment** – fit for triggering joint (multi-disciplinary) work on an assignment. Especially good for topics into analysis and synthesis and for triggering joint discussions amongst several learners.
- **Plenary discussion** – fit for jointly – meaning both learners and instructor(s) – enriching the knowledge and ability transfer by posing questions or statements, followed by jointly discussing about the different aspects/answers to these.
- **Test / Exam** – similar to a test in the e-learning, but providing more time for learners to complete it and providing instructors to observe the learners during completion (e.g. observe group behaviour or monitor for improper passing strategies).

Note that also the term “workshop” is often used to name activities in a contact-phase. A workshop most of the times consists of a combination of delivery methods explained above and is therefore not included as a specific method in this list.

3.4.3. User-story and other examples

To provide a consistent example throughout the complete TM, a user-story will be used. This user-story will provide a concrete example of a Trial, thereby guiding the learners through the entire TM and linking all parts in the TM's (sub-)sessions together. The main aim of the user-story is to contribute to the training module with a clear focus on the practical work to be performed using the TGM. In the Training Module the user-story will be used as a continuing narrative about ‘How to organise a Trial and how to overcome difficulties?’. It is a user-story from the practitioner's point of view. Names and places are not mentioned, but real data (collected during Trials) will be used as examples.

Although the user-story is based on different experiences and Trials in the DRIVER+ project, the story itself is simplified to one gap and one solution. The user-story tells about a fictive group of firefighters that identifies a gap and wants to close it with the use of the TGM. So, they start to work on defining gaps, research questions and solutions. They organise a Trial and indicate challenges, iterations, how to use tips and tricks, how to foresee pitfalls or difficulties and ways out.

The user-story will be written in an active and concerned style. Preview: *“One day you meet with your fellow managers. You discuss (over coffee) the exercises of the last few years. Someone says: ‘Every time we do the evacuation exercise, we meet the same difficulties. Why don't we look for a real solution?’ Another immediately reacts: “Yes, you mention it well. I have recently spoken to my colleague of the neighbouring*

country and he faces the same problem. We are not the only one". One colleague is quite new in the organisation and he asks what the difficulty is about."

Although an important one, the user-story will not be the only example in the TM. In order to enhance a better understanding of the TGM and the transfer of training, a rich variety of examples and illustrations (both good and bad, both fictive and originating from real Trials) will be used as well throughout the TM.

4. Detailed design of each session

This section contains the detailed design for each (sub-)session, using a standardized design template explained in Annex 5. The sessions are listed according to the previously presented structure in Table 2.1. Note that per (sub-)session, both the e-learning and contact-phase contents (if applicable) is described in one table. While the e-learning content is static (meaning the same for all learners if they follow that session) the contact-phase content can be tailored by the TM instructors. Therefore, the tables in this section provide a generic overview, but the exact way to conduct this learning strategy can differ per group of learners and/or per instructor.

4.1. Session 1: Introduction

Table 4.1: Training design of Session 1: Introduction

Session 1: Introduction
<i>What is a Trial, why to use the pan-European Test-bed and how to use this Training Module?</i>
Target groups and entry requirements
Target groups: All learners mandatory Entry requirements: - none -
Duration
Duration e-learning: approx. 10 min.
Learning objectives
<p>Have <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> The pan-European Test-bed, which consists of the Trial Guidance Methodology, supportive tools and methods, and a network of users (e.g. CMINE and CoU) and Centres of Expertise. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> What a Trial is. The multiple roles that are involved in a Trial and the learner's own role in this. The existence of the TGM Handbook and it's use for organizing a Trial.
<p>Be <u>able</u> to:</p> <ul style="list-style-type: none"> Select those basic and advanced parts of the sessions, which are applicable to the learner's specific role in organising a Trial and his/her own interests. Operate the TM's interface, navigate through the (sub-)sessions and use the quizzes, assignments, achievements and forum functions.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> Scheduling own training efforts to complete (parts of) this module to meet the learner's personal training objectives. Referring colleagues and fellow organisation committee members to (parts of) this TM.

<p>Session 1: Introduction <i>What is a Trial, why to use the pan-European Test-bed and how to use this Training Module?</i></p>
<p>Learning strategy e-learning</p> <ul style="list-style-type: none"> • The pan-European Test-bed: what it is and what it offers. <ul style="list-style-type: none"> ○ Video triggering curiosity into the topics of a Trial and the pan-European Test-bed and motivating reading the TGM Handbook and commencing to complete the TM. • Introduction to this Training Module. <ul style="list-style-type: none"> ○ Video of high-level manager welcoming the learner to the Training Module, stressing its importance and providing links to the CoEs, CMINE and CoU. ○ Introduction e-lecture, explaining the blended approach, explaining the main organizers and stakeholders of a Trial and that this TM serves a heterogeneous training audience, providing a listed summary of all e-learning and contact-phase sessions and mentioning the use of a user-story as red-line. ○ Tutorial video of how to use the e-learning’s interface.
<p>Learning strategy contact-phase</p> <ul style="list-style-type: none"> • In the “How to use this TM”-video, an overview of the available contact-phase sessions is provided.
<p>Parts of user-story and examples to be used</p> <ul style="list-style-type: none"> • Video footage of previous Trials is used in the introduction video.

4.2. Session 2: Preparation phase

4.2.1. Session 2.1: Step 0

Table 4.2: Training design of Sub-session 2.1: Step 0

<p>Session 2.1: Step 0 <i>Gap selection and setting the context of a Trial</i></p>
<p>Target groups and entry requirements</p> <p>Target groups: 1. Trial organisers and 2. Practitioners mandatory; Other groups 3. Solution providers and 4. Developers and technicians optional. Entry requirements: Having completed session 1.</p>
<p>Duration</p> <p>Duration e-learning: Basic content approx. 15min. Advanced content approx. 20min extra.</p>
<p>Learning objectives</p> <p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Existence of the CM taxonomy. • Existence of the Portfolio of Solutions. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • How a Trial differs from an exercise.

Session 2.1: Step 0**Gap selection and setting the context of a Trial**

- What a CM gap is.
- How it is embedded in a specific context – the Trial context.
- The baseline and innovation-line and where these are needed.
- Understand the concepts of the Trial dimension, CM dimension and Solution dimension.

Be able to:

- Select and detail out those CM gaps applicable to the learner's own Trial.
- Setting the context of the learner's own Trial, by using the Trial context template for analysing the (im)possibilities and side-restrictions.

Take responsibility for:

- Bringing together required people and resources to prepare, execute and evaluate a Trial.

Learning strategy e-learning**Basic part:**

- **The gaps and context of your Trial.**
 - E-lecture explaining:
 - Start for a Trial can be a gap or an interesting solution.
 - A Trial differs from an exercise, yet there are also great similarities.
 - Selecting and detailing those gaps applicable to you.
 - Drawing an initial baseline (and that the innovation-line will follow). This links to Session 6.3: Drawing a Baseline and Innovation-line.
 - 3 dimensions of a Trial: the Trial dimension, CM dimension and Solution dimension.
 - Setting the side-restrictions of your Trial.
 - Trial context template provided as downloadable document.
 - Quiz about differences and similarities between Trials and exercises.

Advanced part(s):

- **Gap validation.**
 - Animated PPT.
 - Documentation (deliverable **D922.11** (4)).
- **Roles in your Trial committee.**
 - Animated PPT.
 - Link to Session 5.1 TGT and TAP.

Learning strategy contact-phase

No contact-phase foreseen for the Step 0 in itself, but direct links to:

- Session 2.2: Six-step approach.
- Session 6.3: Drawing a Base-line and Innovation-line.

Parts of user-story and examples to be used

- User-story: Introduction. Explanation that this is different compared to what you do normally. You will be shown that you can use an innovative methodology to assess the value of solutions

Session 2.1: Step 0
Gap selection and setting the context of a Trial

(tools, software, etc.) to your organisation. Why would you use this methodology? Does it fulfil a need in your organisation? What could be the worst or the best outcome from trialling solutions? Is it worth the work?

- User-story: Starting point. Your starting point can be either an organisational need ('you feel a rock in your shoe') or a promising new tool or innovative solution ('have you seen that?'). Both starting point are perfect for using the TGM. Now we are going to lead you into the method
- User-story: 'Good to know'. Although we tell one story line to you, please keep in mind that every piece of it is scalable. During any step or decision, you can make it larger and smaller. You can adjust the method exactly according to your needs.

4.2.2. Session 2.2: Six-step approach

Table 4.3: Training design of Sub-session 2.2: Six-step approach

Session 2.2: Six-step approach <i>Trial Objective, Research Question, Data Collection Plan, Evaluation Approach, Scenario, Solution Selection</i>
Target groups and entry requirements:
Target groups: 1. Trial organisers mandatory. Other groups 2. Practitioners 3. Solution Providers and 4. Developers and technicians optional. Entry requirements: Having completed session 2.1
Duration
Duration e-learning: Basic content approx. 20min. Advanced content approx. 40min extra. Duration contact-phase: 90-120min questions & answers.
Learning objectives
Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u> <ul style="list-style-type: none"> • The six steps. <u>Comprehension of:</u> <ul style="list-style-type: none"> • Why data collection is key, what reference data is, how data can be collected. • What is evaluation in a nutshell? • Difference between Trial context and scenario.
Be able to: <ul style="list-style-type: none"> • Explain to a third party the six-step approach in a nutshell. • Explain the key aspects: reference data, data collection, evaluation.
Take <u>responsibility</u> for: <ul style="list-style-type: none"> • Bringing together required people and resources to prepare, execute and evaluate a Trial.
Learning strategy e-learning
Basic part:

Session 2.2: Six-step approach

Trial Objective, Research Question, Data Collection Plan, Evaluation Approach, Scenario, Solution Selection

- **The six steps.**
 - E-lecture explaining:
 - Trial Objective.
 - Research Question.
 - Data Collection.
 - Evaluation Approach.
 - Solution selection.
 - Scenario design.

Advanced part(s):

- Setting SMART Trial objectives (slides with voice-over or video + documentation).
- Writing good research questions (slides with voice-over or video + documentation).
- Options for data collection (slides with voice-over or video + documentation).
- Options for evaluation approaches (slides with voice-over or video + documentation).
- Processes for solution selection, including an elaborate call for applications (video interview with visuals + documentation + link to Session 6.3: PoS + link to Session 5.4: Drawing a base-line and innovation-line).
- Scenario design (video interview with scenario expert + documentation).

Learning strategy contact-phase

The e-lecture and advanced parts only give a (very basic) overview and introduction. A contact-phase is needed where questions can be answered (i.e. Q&A session with instructor). Furthermore, there will be more information available (e.g. as a ppt with voice over). Topics to which questions are foreseen are:

- Relation between gap – Trial context – baseline.
- Relation between Trial set up – data collection – evaluation approach & metrics.
- Relation between baseline – innovation-line – data collection plan – evaluation approach.
- Data collection: possibilities and restrictions by using the technical test-bed, observers etc.
- Solution selection and data collection – pitfalls?

Relation to other sessions:

- Session 2.1: Step zero (linked to the gaps).
- Sessions 3, 4 and 5 (linked to data collection, evaluation approach and scenario).
- Session 6.3 (linked to the solution selection step).

Parts of user-story and examples to be used

- User-story: The very beginning. You meet with your fellow managers. You discuss (over coffee) the exercises of the last few years. Someone says: Every time we do the evacuation exercise, we meet the same difficulties. Why don't we look for a real solution?
- User-story: context, what is missing, what do we need? You could use one of the exercises, to try something new, changing the process, or using some tool. You use the metaphor to find out more on the context and you ask your colleagues: "That rock in our shoe: where is it hurting most?"
- User-story: Formal decision. You take your time to reflect with your colleagues on the organisational needs.
- User-story: Six-step approach: You organise a brainstorming session with direct colleagues to

Session 2.2: Six-step approach

Trial Objective, Research Question, Data Collection Plan, Evaluation Approach, Scenario, Solution Selection

find answers on the following questions: Who is involved and should contribute in what roles? Do we use internals only or do we need to ask support from externals (Centre of Expertise)? What specific situation do we need? How are we working right now (what is the simplified draft baseline)? What is to be improved? How much time is needed to organise this event, the full Trial?

4.2.3. Session 2.3: How to iterate within the six-step approach

Table 4.4: Training design of Sub-session 2.3: How to iterate within the six-step approach

Session 2.3: How to iterate within the six-step approach
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory; other groups 2. Practitioners 3. Solution Providers and 4. Developers and technicians optional. Entry requirements: Sessions 1, 2.1 and 2.2 completed.</p>
Duration
Duration e-learning: Basic content approx. 15 min. Advanced content approx. 20min extra.
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • What needs to be done until when (critical / nice to have) as described in the TGT and TAP. • Technical & Methodological milestones to achieve as described in the TAP. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • The iterative nature of the preparation phase. • The functional components of the Test-bed technical infrastructure, what they offer and the implications of its use. • The relation between technical integration (solution testing procedure) and the six-step approach.
<p>Be <u>able</u> to:</p> <ul style="list-style-type: none"> • Go through the six-step approach multiple times in an iterative, non-sequential manner. • Select those technical infrastructure components and simulators needed for a Trial.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Leading the iterative process of preparing a Trial, from a methodological, technical and practical point of view. • Guiding the technical preparations according to the Trial design.
Learning strategy e-learning
<ul style="list-style-type: none"> • E-Lecture. <ul style="list-style-type: none"> ○ Iterative nature of the six-step approach. ○ Link to technical test-bed (Session 5.2) and the implications of it on the Trial design.

Session 2.3: How to iterate within the six-step approach
<ul style="list-style-type: none"> ○ Link to TGT and TAP (Session 5.1)). ● Individual assignment providing statements with iteration dilemmas.
Learning strategy contact-phase
<i>No contact-phase envisioned for this specific sub-session, but the iterative nature will be covered in the contact phase of session 2.2.</i>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> ● User-story: Iteration of the six-step approach (all steps separately, accompanied by examples). When you start with the Trial preparation you will definitely at some point realize that “things are changing while you are working on them”. So be prepared for some iterations in the preparation process. Don’t worry, it takes some time, but you can be sure the Trial preparation will improve by allowing iterations! ● User-story: Selection of infrastructure components. With the Trial committee you define the Trial objective and infrastructure as SMART as possible.

4.3. Session 3: Execution phase

This session consists of three sub-sessions, first explaining how Trial execution looks like, followed by a sub-session on the aim and structure of the Trial Integration Meeting (TIM) and practical preparations and a sub-session on the Dry Runs.

4.3.1. Session 3.1: Trial execution

Table 4.5: Training design of Sub-session 3.1: Trial execution

Session 3.1: Trial execution
Target groups and entry requirements
<p>Target groups: Mandatory for all 4 target groups.</p> <p>Entry requirements: Learners should have completed both previous sessions (1-2). Having completed session 5 Supportive Tools is advised.</p>
Duration
Duration e-learning: 15 min e-lecture + 10 min quiz completion.
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> ● A model Trial execution. ● Difference between a test or a technical integration and a Dry Run. ● Elements, structure and outcomes of each step in the Execution phase and its. ● Execution maturation processes. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> ● Reasoning behind practical execution steps and stages. ● Recognition of expected readiness level.

Session 3.1: Trial execution
<p>Be able to:</p> <ul style="list-style-type: none"> • Implement a proposed method to set a draft Trial execution planning. • Anticipate necessary amount of time for the given Trial execution.
<p>Take responsibility for:</p> <ul style="list-style-type: none"> • Executing a Trial as Trial staff by following the scenario script, timetable and data collection plan. • Recognizing a plan deviation and reporting it to Trial Director (e.g. pause, rewind or stop).
Learning strategy e-learning
<ul style="list-style-type: none"> • E-lecture (presenter slides with further explanation (as a voice over or video capture)): <ul style="list-style-type: none"> ○ Different aspects of execution (The model Trial execution and its core elements). • QUIZ <ul style="list-style-type: none"> ○ Steps and Stages – the checklist. • Preparing vs. executing vs. running a Trial – Frequent and difficult questions in form of a quiz.
Learning strategy contact-phase
<p><i>No contact-phase envisioned for this sub-session.</i></p>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Simplified Execution phase user-story, including Trial Integration Meeting and both Dry Runs will be presented here. This will be used as an introduction to two successive sub sessions: 3.2 and 3.3. • Example: The timeline of activities. Relevant readiness checklists from previous Trials.

4.3.2. Session 3.2: Transition from preparation to execution: Trial Integration Meeting

Table 4.6: Training design of Sub-session 3.2: Transition from preparation to execution: TIM

Session 3.2: Transition from preparation to execution: Trial Integration Meeting
Target groups and entry requirements
<p>Target groups: Mandatory for 1. Trial organizers, 3. Solution providers and 4. Developers and technicians; Advised for 2. Practitioners.</p> <p>Entry requirements: Having completed Session 3.1 and session 4 is advised. Having completed sessions 5.1 <i>TGT and TAP</i> and 5.2 <i>Test-bed technical infrastructure</i> is advised.</p>
Duration
<p>Duration e-learning: 20 min e-lecture + 5 min assignment completion. Duration contact-phase: 30min questions & answers + 2hrs group assignment.</p>
Learning objectives
<p>Have a knowledge or understanding of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Elements, structure and outcomes of preparation and execution activities between solution selection and Trial execution. • Role, scope and extent of TIM meeting.

Session 3.2: Transition from preparation to execution: Trial Integration Meeting

- Differentiation between technical and conceptual track of TIM meeting.
- Elements, structure and outcomes of each track.
- Process of integrating the results of above into a harmonized Trial script.

Comprehension of:

- Technical & methodological milestones to achieve as described in the TAP.
- Reasoning behind and goals of TIM meeting.
- Interconnections between processes (tests and arrangements) conducted during TIM.

Be able to:

- Lead the preparation of: draft innovation line, solution interactions and data integration scheme, solution Use-Cases, preliminary data collection plan and evaluation approach.
- Implement proposed method and tools to set a Trial preparation schedule and planning.
- Evaluate progress of all activities between solution selection and Dry Run 1.

Take responsibility for:

- Executing all Trial integration activities and leading the TIM meeting.
- Monitoring the progress during preparatory activities.
- Achieving readiness to start preparation steps for Dry Run 1.

Learning strategy e-learning

- E-lecture (presenter slides with further explanation (as a voice over or video capture)):
 - Steps, stages and key events between solution selection and Trial execution.
 - Trial Integration Meeting – objectives and methods.
 - Assessing the readiness level at subsequent execution stages.
 - Achieving the readiness for Dry Run 1.
- Assignments:
 - Individual assignment: drawing the responsibility matrix for TIM and for Trial preparation.

Learning strategy contact-phase

The e-lecture gives an overview and introduction to main conceptual and technical processes carried in execution phase. A contact-phase is needed where questions can be answered (i.e. Q&A session with instructor). In addition, during the contact-phase experimental learning method will be utilized (e.g. group assignments: guide through small TIM meeting, or discussion over former Driver+ Trials critical decisions and their reasoning).

Expected duration: 30min Q&A, 30min group assignment completion, on request 2hrs contact-phase group work.

Parts of user-story and examples to be used

- User-story: The organisation and outcomes of TIM. Who to invite? It is the first overall meeting between all stakeholders in the Trial (practitioners, solution providers, technical support). Duration of the meeting might be 1 or 2 days. What elements are in the programme?
- Example: The timeline of activities. Relevant readiness checklists from previous Trials.

4.3.3. Session 3.3: Trial rehearsals in Dry Run 1 and 2

Table 4.7: Training design of Sub-session 3.3: Trial rehearsals in Dry Run 1 and 2

Session 3.3: Trial rehearsals in Dry Run 1 and 2
Target groups and entry requirements
<p>Target groups: Mandatory for 1. Trial organizers, 3. Solution providers and 4. Developers and technicians; Advised for 2. Practitioners.</p> <p>Entry requirements: Having completed Sessions 3.1, 3.2 and 4 is advised. Having completed sessions 5.1 <i>TGT and TAP</i> and 5.2 <i>Test-bed technical infrastructure</i> is advised.</p>
Duration
Duration e-learning: 30 min e-learning + 10 min quiz completion + 20 min assignment completion.
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Elements, structure and outcomes of rehearsals. • Role, scope and detailed extent of each Dry Run. • Process of integrating results of Dry Run's into Trial planning. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Reasoning behind and goals of rehearsals. • Required Trial execution resources. • Differences between 1st and 2nd tier rehearsals (DR1 and DR2). • Role of a Trial rehearsal as the staff's practical training for Trial execution. • Range and scope of possible corrections carried out in mid-rehearsal final preparation stage. • Practical adaptations before executing a Trial.
<p>Be <u>able</u> to:</p> <ul style="list-style-type: none"> • Implement the proposed method and tools to set a Trial execution schedule and planning for it. • Prepare and lead a Dry Run. • Evaluate the Trial readiness. • Practically test the data collection and evaluation approach. • Implement the proposed method and tools to set corrective activities schedule and planning.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Confirming the readiness for execution. • Executing all rehearsals and defining the corrective actions. • Monitoring progress during mid-rehearsal stage. • Achieving readiness to carry out a Trial.
Learning strategy e-learning
<ul style="list-style-type: none"> • E-lecture (presenter slides with further explanation (as a voice over or video capture): <ul style="list-style-type: none"> ○ Dry Running a Trial for the first time. ○ Implementing corrective actions. ○ Final readiness evaluation during the second Dry Run. • Checklists: <ul style="list-style-type: none"> ○ Trial practical preparation and maturation checklist.

Session 3.3: Trial rehearsals in Dry Run 1 and 2
<ul style="list-style-type: none"> • QUIZ: <ul style="list-style-type: none"> ○ Readiness for rehearsing: Am I ready for it? ○ Dry Runs – key elements. • Assignment: <ul style="list-style-type: none"> ○ Case method: narrative problematic situations (decision forcing cases) followed by a suggested solution.
Learning strategy contact-phase
<i>No contact-phase envisioned for this sub-session.</i>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: The organisation and outcomes of Dry run 1. Deploy all the technical components, security issues, access to rooms, etc. Perform a readiness review (checklist) of solutions, integration, testbed, data collection, scenario and a full technical check. This is also the moment to train the observers. First run a version of the Trial around the table and thereafter run the Trial in the simplified version, without practitioners but with every piece of software connected. • User-story: The organisation and outcomes of Dry run 2. Dry run 2 is a full-dress rehearsal. The technical setup and technical check should not cause any problems. You will run the Trial without real practitioners, but with stand-ins. They all focus on own task and job! Don't forget to do the full-scale data collection. Don't let the participant go, before the after-action evaluation (hot wash) – feel responsible for the immediate serious talk through about tips and tops (first impressions, final improvements). • Example: Schedule and rehearsal planning from DR1 & 2.

4.4. Session 4: Evaluation phase

This section consists of 4 sub-sections, each linked to one step of the evaluation-phase.

4.4.1. Session 4.1: Data quality check

Table 4.8: Training design of Sub-session 4.1: Data quality check

Session 4.1: Data quality check
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory; Other groups 2. Practitioners 3. Solution Providers and 4. Developers and technicians optional. Entry requirements: Having completed Session 1 and Session 3.1.</p>
Duration
<p>Duration e-learning: 5 minutes e-learning (explaining the main procedure of data reality check with the help of icons) + 10 minutes in-depth learning (presentation) + 10 minutes assignment completion. Duration contact-phase: a half-day group-work.</p>
Learning objectives
<p>Have a knowledge or understanding of: <u>Knowledge of:</u></p>

Session 4.1: Data quality check

- Different procedures and methods for data quality check.

Comprehension of:

- The importance to do a quality check as soon as possible after the Trial.
- The needs to verify that (and why) the data collection plan, the evaluation techniques, the metrics and the evaluation questions have been formulated in the preparation phase.

Be able to:

- Structure the collected data in a predefined manner (preparation phase, execution phase: define the data collection and data storage plan in high level of detail – automatic saving or are after action manual actions needed?) and remember to distinguish the three dimensions.
- Check the completeness of the data collection, immediately after the Trial (e.g. outliers, remarkable measurements).
- Collect missing or incomplete data with different methods (e.g. interviews, logfiles, questionnaires, surveys, and focus group sessions).
- Check the quality of the data, and with the help of valid arguments delete data of insufficient quality, including a final check on privacy-sensitive data.
- Establish the truth, accuracy, or reality (including the influence of different dimensions on each other) of the revised data collection and to structure it for the next step (i.e. data analysis).

Take responsibility for:

- Checking and structuring and the data that has been collected during the Trial.
- Collecting missing data.
- Determining a verified and structured set of collected data.

Learning strategy e-learning

E-lecture

- Overview of types of data, collected by different means, according to the data collection plan.
- Explanation of the difference between quantitative and qualitative data and how to use them.
- Check for completeness and quality (vagueness or errors).
- Explanation of what to do in case of missing, vague or erroneous data: how to collect additional information directly after the Trial.

Assignment

- Quiz on the difference between quantitative and qualitative data.
- Review of data collection plan: what kind of objective data could you collect and how (timeliness, accurateness, relevance, completeness, cost effectiveness).

Learning strategy contact-phase

During the contact-phase, practice and ‘understand by doing’ is offered regarding the different evaluation steps, both during preparation (e.g. set-up a data collection plan) and during evaluation (e.g. checking the collected data). This phase is guided by a data professional and is demand-driven. During the contact-phase there are plenty opportunities to discuss critical decisions in the Trial evaluation procedures with persons with the same background and possible additional experience. This is also the best time and place to receive explanation on the relevance of a proper evaluation of the Trial (feel the heart beat). Discussions are foreseen on the topics:

- How to collect the right data and evaluate them after the Trial?
- How to describe and prepare the different roles and performances related to the evaluation

Session 4.1: Data quality check
<p>phase? (First Impression Evaluator, Trial Evaluators, Observers)</p> <ul style="list-style-type: none"> • Are you aware of the relevance of the collection of qualitatively high-level data for the next steps, for example to be able to answer research questions, based on measurements and analysis? • Look back to your preparation and refine the data collection plan and evaluation metric: How does a detailed and specific evaluation plan look like? What are the criteria? • How to avoid bias in the data (=supporting or opposing events in an 'unfair' way, because of allowing personal opinions to influence your judgment)? • How to deal with the fact that the Trial setup might not be sufficiently representative and reliable for drawing conclusions about the operational benefits of specific solutions?
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Immediately after the Trial, save and check the data. During the Trial a lot of data has been gathered. Be sure that this data will stay available after finishing the Trial. The solution owners, the observers, the Trial owner, everyone should know how and where to store the collected data. You do the check immediately. Why? In case something is missing, you can chase after it and the essential pieces of information might be rescued. • Examples of collected data: data quality check. Data quality is objectively a good thing, but how do you know what quality data looks like? How can you assess your data quality to determine how your data will help you assessing the solutions? There is no single list of data quality checks. Defining what you do with your data and what you need it to do truly informs your evaluation. Is the data well structured, and in a manner that can be easily consumed? How reliable is the data? Can you trust it? Is it fit for purpose? How consistent is this data? Is it complete?

4.4.2. Session 4.2: Data analysis

Table 4.9: Training design of Sub-session 4.2: Data analysis

Session 4.2: Data analysis
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory; 2. Practitioners and 3. Solution providers optional. Entry requirements: Having completed Session 1, Session 3.1 and Session 4.1</p>
Duration
<p>Duration e-learning: 5 minutes e-learning (explaining the main procedure of data with the help of icons) + 10 minutes in-depth learning (presentation) + 10 minutes assignment completion. Duration contact-phase: a full-day group-work.</p>
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u> Different data analysis techniques. <u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Different data types and the possible usefulness for evaluation purposes. • Visualisation techniques and skills.
<p>Be able to:</p> <ul style="list-style-type: none"> • Define and formulate a data analysis team.

Session 4.2: Data analysis

- Choose and use the best (most relevant) analysis technique, related to the collected data and purpose of the Trial.
- Analyse quantitative data and qualitative data in a proper way.
- Relate the data to the KPI's (scores) and to identify preliminary conclusions on the KPI-performance and the metrics (thresholds).
- Perform a global visualisation of the data (how much collected, what type, completeness, relevance, highlights).
- Find relations inside the collected data and with predefined gaps and questions.

Take **responsibility** for:

- Fully structured data analysis.

Learning strategy e-learning

E-lecture:

- Step by step explanation of data analysis in the data analysis team: structure, aggregate, determine raw outcomes, identify patterns, preliminary conclusions, first relations to KPI's, formulation of answers to research questions.
- Visualise the data contributions to three dimensions.
- Determine and visualise the gaps and the data that might contribute to bridge the gap.

Assignment on visualisation:

- With the help of a predefined and provided data set, practice with different visualisation methods. Assignment is to review the data in different dimensions and visualise the contribution to them.

Learning strategy contact-phase

- The first topic in the contact phase is how to choose a systemized method or technique for aggregating, analysing and re-analysing data. The data analysis team should be organised in such a way that they are able to describe and perform the data analysis.
- The next topic in the contact phase is to determine a few pitfalls and how to avoid them:
 - Tunnel vision: how to avoid that (from the start!) in your data analysis team.
 - Unexpected outcomes: how to determine them, how to deal with them.
- The learners have had the possibility to bring in their own data collection and to define specific questions or issues related to the data analysis. This will be addressed and discussed during the contact phase. In case there is no actual data collection, a predefined dataset could be used.

Parts of user-story and examples to be used

- User-story: Data analysis. You will go through a process of inspecting and https://en.wikipedia.org/wiki/Data_transformation transforming, and with the goal of discovering useful information. You will use the analysis to work toward conclusions, but not too fast. Be sure that you really look objectively to the data and report them without prejudice, transforming data and with the goal of discovering useful information. You will use the analysis to work toward conclusions, but not too fast. Be sure that you really look objectively to the data and report them without prejudice.

Session 4.3: Data synthesis

Table 4.10: Training design of Sub-session 4.3: Data synthesis

Session 4.3: Data synthesis
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory; 2. Practitioners and 3. Solution provider optional. Entry requirements: Having completed Session 1, Session 3.1 and Session 4.1 and 4.2.</p>
Duration
<p>Duration e-learning: 5 minutes e-learning (explaining the main procedure of data with the help of icons) + 10 minutes in-depth learning (examples and formats). Duration contact-phase: a half-day group-work (led by an experienced Trial owner or Trial host).</p>
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • How to extract data from a dataset for synthesis purposes. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • The importance of using well-formulated research questions in a Trial. • Formulating lessons learned, in such a way that organisations really learn from recent activities.
<p>Be <u>able</u> to:</p> <ul style="list-style-type: none"> • Organise an effective meeting to extract data for synthesis purposes. • Answer the research questions and to support these answers with empirical evidence (and reasoning) gathered during the Trial. • Formulate the degree to which the Crisis Management performance objective, the solution objective and Trial objective have been achieved. • Indicate the level of improvement of Crisis Management performance during the Trial. • Specify the effect of the solution on Crisis Management and the usability of the solution. • Provide a full scale overview of the Trial results, based on the analysed data and embedded in a relevant context (related conclusions to gaps). • Consider the ethical, legal and societal issues related to the conclusions.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Determining the lessons learned, to be followed by actions (next steps). • Putting results in context, not losing any piece of valuable information. • Objective assessing solutions within the Trial context.
Learning strategy e-learning
<p>E-lecture:</p> <ul style="list-style-type: none"> • Be sure that you understand at this point the three dimensions in the Trial. Take the step to bridge the gap: explanation of how data (Trial dimension) can be used to bridge the gap and to use the solution (solution dimension) to support you and your organisation in future (CM dimension). • How to validate your results (what makes a conclusion valid?) • Link to KPI's and objectives: did you reach your goals? Why/why not? <p>At the end of the E-Lecture a format for standard presentation data synthesis meeting is being provided (downloadable document provided to learners as checklist/template), with the following info:</p>

Session 4.3: Data synthesis
<ul style="list-style-type: none"> • What results are remarkable? Why? Can they be explained? • Did you expect these results? Why or why not? Check with the audience: do they have the same opinion? • What are possible explanations for these results in three dimensions? • What are the main conclusions based on these results? Here think about your initial gaps and Trial Objectives. Have you bridged your gap? At least partly? Let the audience add to the list with their analysed insights. • Are the results generalizable? To what and in what dimension? Why or why not? • What can be concluded about the solution? Did it address your gaps as expected? Why or why not? <p>In this step no (group) assignment is developed, because data synthesis is too specific to generalize. In the contact phase the student should bring their own material (an analysed data collection).</p>
Learning strategy contact-phase
<ul style="list-style-type: none"> • In the contact phase the students learn to present their own data (narratively and/or statistically). They will be informed about the guidelines as to how to present a synthesis. A synthesis could include numerical and graphical presentations of the data. • Sense making: Tips and tricks in finding strength and consistency of the evidence and investigate reasons for any inconsistencies. • Discussion on what can go wrong in data syntheses and how to avoid this?
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Meeting with practitioners. Make sure to gather the practitioners and put the collected and analysed data into context. Don't give your own analysis yet, let them accompany you in understanding the results and defining lessons learned. • Example of data synthesis, answering the questions above with an example.

4.4.3. Session 4.4: Dissemination of results

Table 4.11: Training design of Sub-session 4.4: Dissemination of results

Session 4.4: Dissemination of results
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory; 2. Practitioners and 3. Solution provider optional. Entry requirements: Having completed Session 1, Session 3.1.</p>
Duration
<p>Duration e-learning: 5 minutes e-learning (explaining the main procedure of dissemination with the help of icons) + 10 minutes in-depth learning (examples). Duration contact-phase: a full-day group-work (guided by a communication specialist).</p>
Learning objectives

Session 4.4: Dissemination of results

Have a **knowledge or understanding of:**

Knowledge of:

- Various dissemination methods and strategies.
- Communication skills to:
 - Translate the results to a broad audience
 - Show the benefits and uptake of using TGM in Trials.
 - To make the results available and usable for future decision making.

Comprehension of:

- Value of lessons learned in Trials for own organisation and stakeholders.
- Value of lessons learned in Trials for other organisations, which have not at all been involved yet.

Be able to:

- Start a useful discussion of the results (relevance for other organisations, review of the conclusions by participants and solution providers).
- Document all results in a proper way (knowledge database, PoS, Lessons Learnt Framework).
- Use different communication channels in dissemination (social media, popular articles, research papers, website, newsletter, interview, multimedia, animation, presentation, pitch, etc.).
- Reflect on the ethical, societal and legal aspects of dissemination.

Take responsibility for:

- Letting others know what you learnt organising and performing a Trial.
- Disseminating the results internally, choosing the best communication method out of several options: presentation, explanations, recommendations, lessons learnt, examples of solution implementation, et cetera.
- To disseminate the results externally (plan this dissemination to whom and why/when/how).

Learning strategy e-learning

E-lecture:

- Summary of setup of Trial (gaps, research questions, dilemmas, solutions, execution/implementation) – focus on questions and answers.
- What results should be disseminated internally, to whom and how and why? Explanation of reasonable internal documentation.
- Why is the result of the Trial interesting for externals (differentiation to three dimensions) – specific target group: solution providers.
- Sustainability of the results: how to guarantee that the results and gained knowledge will stay “alive” and will be implemented in the right way?

List of examples (with short explanations in easy to access presentations):

- Overview of how Lessons Learned Framework, Knowledge database and PoS can be used after the Trial.
- Short example of the list of gaps being bridged and answered during a Trial.
- Short example of one or two research questions being answered with data collection.
- Overview of dilemmas during the preparation and execution phase and how they can be overcome.
- Tips and tricks for the dissemination to solution providers: how to produce valuable feedback, how to learn (both ways) from the Trial results.

Session 4.4: Dissemination of results
Learning strategy contact-phase
<ul style="list-style-type: none"> • The contact phase is organised together with a communication expert. • The contact phase starts with Practice: talk about your Trial, indicate the evaluation troubles and results, formulate questions on how to improve the evaluation phase for your organisation. This is a guided group discussion and may lead to several in depth sub sessions. • The aim of the contact phase is to get convinced that the time spent on the whole Trial has been worth. This ‘belief’ is the power behind effectual and fruitful dissemination. • The contact-phase ends with personally noting down future work: make an overview of what you would do differently the next time and why; inspire your audience to use the TGM in future.
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: After the Trial – dissemination. After the Trial you probably would like to share (or will have to share) your approach, the setup, the execution and the results with a variety of different stakeholders that all have different interests, priorities, logics and values. Explaining to them why you did this and how the organisation benefitted from the Trial is a huge task, but don’t worry: it is up to you to decide who should know a small piece or the whole story. Ask your preparation team in the very beginning: how/what are we going to gain from the dissemination? How does this information sharing help us in future steps?

4.5. Session 5: Supportive tools and methods

This session contains six sub-sessions providing training materials for specific tools and methods which can be used during the preparation-, execution- and/or evaluation-phases of a Trial.

4.5.1. Session 5.1: TGT and TAP

Table 4.12: Training design of Sub-session 5.1.1: Trial Guidance Tool

Session 5.1.1: Trial Guidance Tool
Target groups and entry requirements
<p>Target groups: 1. Trial organiser mandatory.</p> <p>Entry requirements: Having completed session 1, 2 – Session 5.5 is advised.</p>
Duration
<p>Duration e-learning: 45 min.</p>
Learning objectives

Session 5.1.1: Trial Guidance Tool
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Relation between TGT and TGM. • The importance and purpose of using a TGT to apply the methodology. • Difference between Trial types. • How the six-step approach is depicted in the TGT. <p>Relation between TGT and PoS.</p> <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Aims and functionalities of each software component.
<p>Be <u>able</u> to:</p> <ul style="list-style-type: none"> • Navigate the TGT platform and implement the TGM.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Managing their own team in the TGT. • The correct implementation of the TGM.
Learning strategy e-learning
<p>Basic part:</p> <ul style="list-style-type: none"> • TGT components and relation to the TGM. <ul style="list-style-type: none"> ○ E-lecture explaining the basic components of the TGT and the relation to the TGM. <p>Advanced part(s):</p> <ul style="list-style-type: none"> • Trial definition. <ul style="list-style-type: none"> ○ E-lecture and tutorial are divided into several sections explaining the formulation of: <ul style="list-style-type: none"> ▪ Trial context. ▪ Trial Gaps. ▪ Trial Objectives. ▪ Research questions. ▪ Data collection plan. ▪ Evaluation technique. ▪ Trial scenarios. ▪ Related Solutions. ▪ Test cases.
Learning strategy contact-phase
<p><i>No contact-phase envisioned for this sub-session.</i></p>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Supportive tools and how/when/where to use them.

Table 4.13: Training design of Sub-session 5.1.2: Trial Action Plan

Session 5.1.2: Trial Action Plan
Target groups and entry requirements
<p>Target groups: 1. Trial organiser mandatory.</p> <p>Entry requirements: Having completed session 1 and 2, session 6.1.1 is advised.</p>
Duration
Duration e-learning: 20 min.
Learning objectives
<p>Have a <u>knowledge or understanding of:</u></p> <p><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. • Roles and responsibilities inside TAP. • What part and to what extent TAP structure may be modified. • Why it is important to keep TAP concise by removing redundant and unnecessary information.
<p>Be able to:</p> <ul style="list-style-type: none"> • Identify TAP roles & assign responsibilities for sections. • Perceive the consequences of delaying any part of the TAP. • Compose the TAP completion plan and review schedule and explain it to colleagues.
<p>Take <u>responsibility for:</u></p> <ul style="list-style-type: none"> • Assigning roles and delegating subsequent tasks and TAP sections. • Assessing the tap completion in accordance to set time schedule.
Learning strategy e-learning
<p><u>E-Learning (presenter slides with voice over and short animations – “<i>explanation</i>” method):</u></p> <ul style="list-style-type: none"> • 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. • 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. • 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. • 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.

Session 5.1.2: Trial Action Plan
QUIZ:
<ul style="list-style-type: none"> • Quiz with questions on TAP.
Learning strategy contact-phase
<i>No contact-phase envisioned for this sub-session.</i>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Trial Action Plan. • Example: Link to official DRIVER+ TAP template (available after its official release). • Example: Links to completed TAP's of DRIVER+ Trials.

4.5.2. Session 5.2: Test-bed technical infrastructure

Table 4.14: Training design of Sub-session 5.2: Test-bed technical infrastructure

Session 5.2: Test-bed technical infrastructure
Target groups and entry requirements
<p>Target groups: 1. Trial organizer and 4. Developers and technicians mandatory. 3. Solution providers optional.</p> <p>Entry requirements: Having completed sessions 1 and 3.1; sessions 2.1-2.2 are advised.</p>
Duration
Duration e-learning: Basic content approx. 15 min; Advanced content approx. 15min.
Learning objectives
<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 software components available for Trial operators and those extra for developers. • Where to find detailed (developer) documentation per component and installers. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • The aims and functionalities of each software component.
<p>Be able to:</p> <ul style="list-style-type: none"> • Select components needed/wanted for their own Trial. • Identify simulators and data-sources needed to support their own Trial. • Find and go through user manuals/tutorial for those components selected. • Brief IT-experts/developers about their own Trial, why the selected components are needed in their own Trial and potentially which connections to solutions/simulators are to be developed.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Arranging internal or external IT-support to get the Test-bed technical infrastructure up and running for their own Trial.
Learning strategy e-learning

Session 5.2: Test-bed technical infrastructure
<p>Basic part:</p> <ul style="list-style-type: none"> ● The Test-bed technical infrastructure. <ul style="list-style-type: none"> ○ Explanation regarding the infrastructure’s core components ○ Explanation regarding the infrastructure’s developer extras ○ Links to GitHub (open source components + developer documentation). <p>Advanced part(s):</p> <ul style="list-style-type: none"> ● Technical preparations and software development. <ul style="list-style-type: none"> ○ Interview video with infrastructure implementer explaining: <ul style="list-style-type: none"> ▪ Technical preparation process. ▪ Interdependencies between technology, Trial context and Trial scenario development. ▪ Possibilities for technical support from CoEs.
Learning strategy contact-phase
<i>No contact-phase envisioned for this sub-session.</i>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> ● User-story: Preparing the technical infrastructure.

4.5.3. Session 5.3: Gap assessment methods/gap selection

Table 4.15: Training design of Sub-session 5.3: Gap assessment method / gap selection

Session 5.3: Gap assessment methods/gap selection <i>Gap selection and setting the context of a Trial</i>
Target groups and entry requirements:
<p>Target groups: 1. Trial organisers mandatory; 2. Practitioners optional. Entry requirements: Having completed session 1.</p>
Duration
Duration e-learning: 20 min
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> ● What is a gap and how to identify it. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> ● Methods to find gaps (feedback loops, incident/accident reports/brainstorming). ● Which personnel to involve in this process. ● How the gaps are embedded in their Trial context (people, actions, equipment, information exchanges etc.).

<p>Session 5.3: Gap assessment methods/gap selection <i>Gap selection and setting the context of a Trial</i></p>
<p>Be able to:</p> <ul style="list-style-type: none"> • Identify gaps, the involved roles, actions, tools and information exchanges. • Assess which gaps to address.
<p>Take responsibility for:</p> <ul style="list-style-type: none"> • Bringing together required people and create an atmosphere in which gaps can be discussed.
<p>Learning strategy e-learning</p>
<p>Basic part:</p> <ul style="list-style-type: none"> • E-lecture explaining: <ul style="list-style-type: none"> ○ “Gap-culture”: Why identifying a gap is something good. ○ How to identify gaps: Continual improvement process, brainstorming, lessons learnt framework.
<p>Learning strategy contact-phase</p>
<p><i>No contact-phase envisioned for this sub-session.</i></p>
<p>Parts of user-story and examples to be used</p>
<ul style="list-style-type: none"> • User-story: Gap selection. You can use Crisis Management Taxonomy to find out which CM-function your gap is addressing. Using the taxonomy brings you added value: you will find out which CM-function your needs are connected to, to narrow down the problem. The taxonomy might help you to focus your need in standard words.

4.5.4. Session 5.4: Drawing a Baseline and Innovation-line

Table 4.16: Training design of Sub-session 5.4: Drawing a Baseline and Innovation-line

<p>Session 5.4: drawing a baseline and innovation-line <i>the reasoning and techniques of baseline and innovation-line</i></p>
<p>Target groups and entry requirements</p>
<p>Target groups: 1. Trial organisers, 2. Practitioners and 3. Solution providers mandatory. Entry requirements: Having completed session 1, session 2.1 and 2.2.</p>
<p>Duration</p>
<p>Duration e-learning: 20 min Duration contact-phase: approx. 2hrs</p>
<p>Learning objectives</p>
<p>Have a knowledge or understanding of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Elements of a baseline: personal, actions, tools, information exchanged, decisions taken. • Process modelling technique (swim lanes and Business Process Modelling Notation (BPMN) as examples). <p><u>Comprehension of:</u></p>

<p>Session 5.4: drawing a baseline and innovation-line <i>the reasoning and techniques of baseline and innovation-line</i></p>
<ul style="list-style-type: none"> • The concept of a baseline and innovation-line – what is it good for?
<p>Be able to:</p> <ul style="list-style-type: none"> • Select and detail out those CM gaps applicable to the learner’s own Trial. • Drawing a baseline and innovation-line. • Use the baseline and innovation-line as means of communication with solution providers.
<p>Take responsibility for:</p> <ul style="list-style-type: none"> • Creating a first draft of your “gap-process”-baseline.
<p>Learning strategy e-learning</p>
<ul style="list-style-type: none"> • E-lecture explaining: <ul style="list-style-type: none"> ○ The elements of a baseline and the rationale behind them. ○ Process modelling in a nutshell. ○ BPMN, swim lanes as examples for modelling techniques. ○ How to use the baseline to create the innovation-line.
<p>Learning strategy contact-phase</p>
<p>Group assignment for learners to model a small baseline based on their gap. Learn to interact as a group and to explain the concept to a third party. Create an innovation-line from that baseline and learn how to use it as mean of communication to the solution provider.</p>
<p>Parts of user-story and examples to be used</p>
<ul style="list-style-type: none"> • User-story: Baseline & innovation-line. To be able to compare the results of the innovation line (working with a tool or solution) you need a baseline, describing how you work right now. It is the day to day working procedure, just describe it. Be aware that it is different to describe the baseline in following the plans or how you normally work.

4.5.5. Session 5.5: Societal Impact Assessments

The aim of the workshop is to present an overview of a structured methodology for assessing the societal impact of Crisis Management solutions. This methodology was originally designed to be used by the trainers who will train the DRIVER+ consortium in how to carry out Societal Impact Assessments (SIAs), but a final version of the SIA framework (i.e. the methodology) will be designed so that it can be used beyond the project. A SIA refers to assess the way in which Crisis Management solutions might create (unintended) negative or positive impacts on society at large.

Table 4.17: Training design of Sub-session 5.5: Societal Impact Assessments

<p>Session 5.5: Societal Impact Assessments</p>
<p>Target groups and entry requirements</p>
<p>Target groups: 1. Trial organizers and 3. Solution providers mandatory.</p>

Session 5.5: Societal Impact Assessments
<p>Entry requirements: Knowledge about the basic features of the solutions they are working with and completion of sessions 1, 2.1 and 2.2.</p>
Duration
<p>Duration e-learning: 15 min e-lecture. Duration contact-phase: 10min introduction + 45 minutes of implementation of the methodology (physical workshop with group work/contact phase) + 5 minutes to assess the workshop by filling in a questionnaire (in person, at the end of the workshop).</p>
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • Why societal impact is a crucial part of European Crisis Management. • How the work the target group is engaged in, in terms of solution application and development, can have unintended impacts on society which can be assessed. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • How CM solutions can have unintended impact on society in various ways. • How “societal impact” differs from “effect” and “efficiency”, and how societal impact relates to accountability. • Why unintended impacts and societal impact cannot be quantified.
<p><u>Be able to:</u></p> <ul style="list-style-type: none"> • Recognize real life examples of societal impact of solutions. • Identify societal impacts of specific functions of CM solutions that have been discussed as part of the SIA training session. • Conduct a SIA, using the methodological tool (SIA framework). • Critically review SIAs conducted by others.
<p><u>Take responsibility for:</u></p> <ul style="list-style-type: none"> • Assessing the functions of the solutions before designing or using them. • Carrying out a SIA where needed.
Learning strategy e-learning
<p><u>Introduction/ presentation (e-lecture):</u></p> <ul style="list-style-type: none"> • A presentation on the concept of SIA, and why this is crucial to European CM. <ul style="list-style-type: none"> ○ The introduction emphasises and illustrates the unintended effects that CM solutions may have on society. In line with the SIA methodology presented later, if so by drawing on concrete examples and cases which are relevant to the key themes in DRIVER+. • A presentation of the DRIVER+ methodology for doing SIA. <ul style="list-style-type: none"> ○ This presentation gives a detailed introduction into the SIA framework’s components. This means that after identifying the importance of societal impact assessments for CM, the audience learn about a step-by-step method to conduct such assessments. <p><u>Feedback of the session in an online document):</u></p> <ul style="list-style-type: none"> • Questionnaire assessing the SIA.
Learning strategy contact phase

Session 5.5: Societal Impact Assessments
<p>After having followed the 15-minute e-lecture introducing SIA in the context of CM and introducing the framework that can be used to carry out such assessments, the next step is for the learners to work with the framework themselves. Based on the presentation of the SIA framework in the e-lecture, this activity will start with the trainer explaining the objectives of the session as well as the short agenda. After that, the main part of the session starts, which allows the learners to work with practical examples to better understand how to conduct SIAs.</p> <p><u>Individual/ group work implementing the methodologies</u></p> <ul style="list-style-type: none"> • A SIA refers to the way in which Crisis Management solutions might create (unintended) negative or positive impacts on society at large. During this activity, the learners conduct assessments by themselves based on the functions of the specific CM solutions that they are working with or on relevant example solutions. Every component is supported by training material to illustrate and summarize the most important points and give room to conduct one’s own assessments. <p><u>Feedback of the session (paper questionnaire distributed at the end of the contact phase activity followed if needed by an online update of the document)</u></p> <ul style="list-style-type: none"> • Questionnaire assessing the SIA. The learners will have the possibility to update (online) the questionnaire filled in after the e-lecture.
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Preparation of the Trial. In a qualitative way the usability of solution and the ability to implement it can be assessed (fitness for implementation in legacy system related to IT, procedures and legal/ethical/societal aspects), for example with the help of questionnaires. • Example: Interview of partners and external learners after a SIA (shown at the end of the e-learning presentation). • Example: Short video of a learner giving a SIA by her/himself (shown at the end of the contact-phase).

4.5.6. Session 5.6: Lessons Learned Framework

Table 4.18: Training design of Sub-session 5.6: Lessons Learned Framework

Session 5.6: Lessons Learned Framework <i>Use and application context of the LLF</i>
Target groups and entry requirements
<p>Target groups: 1. Trial organisers mandatory, 2. Practitioner optional. Entry requirements: none.</p>
Duration
<p>Duration e-learning: 15 min.</p>
Learning objectives
<p>Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u></p> <ul style="list-style-type: none"> • The LLF and its elements. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Why the LLF is useful. • Where in your organization it can be applied.

<p>Session 5.6: Lessons Learned Framework <i>Use and application context of the LLF</i></p>
<ul style="list-style-type: none"> • How it can help in identifying gaps.
<p>Be able to:</p> <ul style="list-style-type: none"> • Fill in the the LLF.
<p>Take responsibility for:</p> <ul style="list-style-type: none"> • Being able to explain the value of the LLF to a third party.
<p>Learning strategy e-learning</p>
<p>Basic part:</p> <ul style="list-style-type: none"> • E-lecture explaining: <ul style="list-style-type: none"> ○ The LLF and its elements. • The Lessons Learnt Framework • Assignment: <ul style="list-style-type: none"> ○ Fill in the LLF for an incident/accident the learner experienced last year.
<p>Learning strategy contact-phase</p>
<p><i>No contact-phase foreseen for this sub-session.</i></p>
<p>Parts of user-story and examples to be used</p>
<p>Not part of user-story.</p>

4.6. Session 6: Pan-European networks and references

This session contains 3 sub-sessions providing references to other organisations (e.g. CoEs), the glossary and a training sub-session on what can be found in and how to use the Portfolio of Solutions.

4.6.1. Session 6.1: Networks - Centres of Expertise, CMINE and Community of Users

Table 4.19: Training design of Sub-session 6.1: Networks – CoE, CMINE and CoU

<p>Session 6.1: Networks - Centres of Expertise, CMINE and Community of Users <i>Where DRIVER+ is embedded in and further information can be found</i></p>
<p>Target groups and entry requirements</p>
<p>Target groups: 1. Trial organisers mandatory. Other groups 2. Practitioners 3. Solution Providers and 4. Developers and technicians optional. Entry requirements: none.</p>
<p>Duration</p>
<p>Duration e-learning: 15 min.</p>
<p>Learning objectives</p>

Session 6.1: Networks - Centres of Expertise, CMINE and Community of Users <i>Where DRIVER+ is embedded in and further information can be found</i>
<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 Centres of Expertise and where to find them. • The CMINE. • The CoU. • What kind of additional information on Trials can be found in the PoS. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • The fact that there are different points of contact for information and support within the EU.
<p>Be able to:</p> <ul style="list-style-type: none"> • Explain to a third party which network is helpful for which kind of question. • Search for support, further information, reflections on Trials etc.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Collecting contact information and knowing whom to ask for what.
Learning strategy e-learning
<ul style="list-style-type: none"> • E-lecture explaining: <ul style="list-style-type: none"> ○ What is a Centre of Expertise? What is their role in supporting and conducting Trials? ○ What is the CMINE? What is their role in supporting a Trial? What kind of questions can be asked here? ○ The European Community of Users (CoU) and how is it related to DRIVER+. • List of contact details of DRIVER+ CoEs, CMINE and the European CM CoU.
Learning strategy contact-phase
<i>No contact-phase foreseen for this sub-session.</i>
Parts of user-story and examples to be used
Not part of the user-story.

4.6.2. Session 6.2: Glossary and CM taxonom

Table 4.20: Training design of Sub-session 6.2: Glossary and CM taxonomy

Session 6.2: Glossary and CM taxonomy <i>Gap selection and setting the context of a Trial</i>
Target groups and entry requirements
<p>Target groups: Advised for all four target groups. Entry requirements: none.</p>
Duration
<p>Duration e-learning: 20 min.</p>
Learning objectives

Session 6.2: Glossary and CM taxonomy <i>Gap selection and setting the context of a Trial</i>
<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 glossary and the terminology. • The CM taxonomy. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • The fact that there are some guidelines to respect and how to use them.
<p>Be able to:</p> <ul style="list-style-type: none"> • Find the meaning of a word in the glossary. • Use the CM taxonomy to characterize your gap or solution.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Making sure the right terms are used in the right sense (raising awareness to the glossary) and making sure to use the CM taxonomy.
Learning strategy e-learning
<ul style="list-style-type: none"> • E-lecture explaining: <ul style="list-style-type: none"> ○ Where to find and how to use the glossary. ○ What is taxonomy? ○ Where to find and how to use the CM taxonomy. • The glossary provided as searchable list. • Assignment: connect these gaps/ solutions with their respective CM function.
Learning strategy contact-phase
<p><i>No contact-phase foreseen for this sub-session.</i></p>
Parts of user-story and examples to be used
<p>Not part of the user-story.</p>

4.6.3. Session 6.3: Portfolio of Solutions

Table 4.21: Training design of Sub-session 6.3: Portfolio of Solutions

Session 6.3 Portfolio of Solutions
Target groups and entry requirements
<p>Target groups: 1. Trial organisers and 3. Solution providers. Entry requirements: Having completed Sessions 1 and 2.1 is advised.</p>
Duration
<p>Duration e-learning: 30 min.</p>
Learning objectives

Session 6.3 Portfolio of Solutions
<p>Have a <u>knowledge or understanding</u> of:</p> <p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • PoS structure and content. • Solution advertisement and its benefits. • Solution discovery. • CM taxonomy. <p><u>Comprehension of:</u></p> <ul style="list-style-type: none"> • Aims and functionalities of each software component.
<p>Be able to:</p> <ul style="list-style-type: none"> • Describe their own solution in the PoS. • Identify potential solutions to be used in a Trial.
<p>Take <u>responsibility</u> for:</p> <ul style="list-style-type: none"> • Advertising their own solution(s) – solution providers. • Discover solutions that claim to address CM functions mentioned in Trial Gaps.
Learning strategy
<p>Basic part:</p> <ul style="list-style-type: none"> • PoS components and benefits of using it. <ul style="list-style-type: none"> ○ E-lecture explaining the basic components of the PoS and what benefits it provides. <p>Advanced part(s):</p> <ul style="list-style-type: none"> • Describing their own solution. <ul style="list-style-type: none"> ○ E-lecture and tutorial divided into several sections explaining: <ul style="list-style-type: none"> ▪ How to provide basic solution description. ▪ Solution use cases and relation to CM functions. ▪ Adding references to where the solution was used (example: in a Trial). ▪ Solution documentation. ▪ Feedback section.
Links to contact-phase
<p><i>No contact-phase envisioned for this sub-session.</i></p>
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • User-story: Discovering possible solutions. How to organise a solution selection? Listen and look to the pitches with you gap and the research question in the back of your thoughts. Would it help you and your organisation, and how/where/when?

5. Implementation of a sustainable training package

For the final TM to be used after the project, hence to be a sustainable project output, the delivery of the final TM should consist of more than just the implementation of the training content. The delivery should be that of a total package assuring the training content can be provided by multiple CoEs, staff working on it can be exchanged and replaced, and the content be maintained and updated.

The design of this training content is described in the previous sections. This section describes the other parts of the training package, starting by listing the sustainability and feasibility objectives (section 5.1), then listing the contents of this package derived from these objectives in section 5.2, the processes for hosting, learner administration, helpdesk support and maintenance (section 5.3) and the structure to be put in place to keep a pool of instructors and the training content itself up-to-date and future-proof (section 5.4). The final section 5 provides an overview of the implementation options, including some details regarding the reference implementation of the final TM.

5.1. Sustainability objectives for the final Training Module

The main objective is that the TM can be and actually is used at the moment of its delivery, also after the project duration. Having access to and using the TM is conditional for CM professionals to use all aspects of the pan-European Test-bed well. This requires the following sub-objectives to be met:

- The pan-European Test-bed must be known by the CM community. Therefore, the TGM Handbook and the TM must be easily accessible via clear points of contact (e.g. CoE). Also, the TGM Handbook should provide a direct link to the TM and vice-versa, as both go hand-in-hand. Already promoting and advertising the TM and the TGM Handbook during the course of the project helps in this respect, as well as assuring that the project outputs can be easily retrieved and accessed by all relevant stakeholders and potential users of the Test-bed (for instance via a webpage that is available for several years after the project duration).
- Just like the TGM Handbook is a living document, the training package should be a service with a set of training contents that will be updated on a regular basis. Only in this way it can remain fully consistent with the developments in the pan-European Test-bed (e.g. updates of the TGM and expansions of the user network).
- In case of multiple implementations (for instance at various CoEs), consistency amongst these packages must be assured. If TM implementation at one CoE differs in content from another CoE, updating the TM is much more complex and will jeopardize the quality of the TM and its compliance with the TGM.
- Any CoE that has implemented the TM must be able to tailor the TM (especially the contact-phase) to the needs and circumstances of a specific group of learners. This can be both a “generic tailoring” offering the TM in a specific language (e.g. in Estonian by EASS), as well as a “specific tailoring” in which the assignments in the contact-phase are tailored to the specific needs of a specific group of learners attending the course once.
- Sufficient numbers of instructors (i.e. resources) should be available to provide feedback during e-learning sessions and to facilitate the contact-phase. Ideally, every MS would have a DRIVER+ CoE, offering training courses in their native language. More realistic is to have a pool of instructors covering the main languages in Europe understood by a large majority of European CM professionals: English, French, German, Spanish and Italian.
- The costs involved for a CoE for hosting, maintaining and updating the TM, and facilitating the contact-phase, should be covered. This relates to the cost structure, revenue streams and value proposition of a CoE and can/will of course vary between countries and CoEs.

5.2. Delivery of the DRIVER+ Training Module package

Taking these objectives into account, the total TM package is designed so that it includes:

- Curriculum description of the TM contents, aimed at not only informing but also attracting (new) learners, their colleagues, TGM/Test-bed instructors and their managers. This description can also be included in the set of promotion materials for the entire Test-bed.
- All e-learning contents (i.e. source files), comprising an instructor manual for providing feedback to assignments and coaching learners, a description how to best implement these, and a list of requirements and wishes for hosting this e-learning package.
- All contact-phase contents (including source files) comprising instructor notes about how to run the sessions, and a manual about how to tailor the contact-phase.
- Train-the-trainer programs to train TM instructors (for both e-learning and contact-phase courses) and to train members of the Test-bed steering committee (see section 5.4 for more details).
- Contact details of the (current) pool of TM instructors, the Test-bed steering committee and the CoE(s) hosting the TM.

The whole TM package will be delivered in a reference implementation, embedded in a Learner and Learning Content Management System (LCMS).

5.3. Hosting, learner administration, helpdesk and maintenance

Hosting of the TM will be done through at least one reference implementation, most probably at EASS as this organisation is the **T924.1** leader and has a full LCMS up and running. More implementations at other CoEs are encouraged. For each implementation, the following needs to be provided:

- A system registering all learners who have applied for the TM course, to monitor their progress and schedule the delivery of the contact-phase on which location. It is recommended to use the LCMS functionalities for this purpose.
- This learner registration must be easy to complete for learners, and should respect the EU GDPR (European data protection and privacy regulations).
- A helpdesk (i.e. point-of-contact) needs to be installed for enrolment and technical as well as administrative support.
- The e-learning platform could also be used as a repository of all contact-phase materials (e.g. presentations and assignments, instructor notes) and all source materials of all contents (e.g. all separate video files). These parts should only be accessible for TM instructors and administrators.
- Maintaining these contents requires that the source materials should be easy to upgrade in case of technical upgrades of the e-learning platform and/or updates of resources used during the contact-phase (e.g. newer versions of MS Office).

5.4. Content updates and Train-the-Trainer programs

The TGM Handbook and TM are envisioned to be living documents that can be adjusted along with experience gained in using them after the end of the project and due to changing circumstances in which they are used. It is recommended to implement the following processes in order to conduct these updates and maintain the quality of these products:

- The source files must remain accessible, in order to implement additional insights and knowledge gained from other Trials and similar experiments/events using the Test-bed.
- A Test-bed steering committee, including a TM working group, should be established to monitor and decide upon TM curriculum updates and to assure consistency between the different sessions and different implementations of the TM. This committee should consist of representatives covering all aspects of the Test-bed (incl the TM). These members should come from the envisioned CoEs and/or the international expert network they are part of).

- Hand-over between representatives/members (e.g. due to job changes) requires train-the-trainer programs and curriculum development expertise with these members. Availability of these train-the-trainer programs helps sustaining the body of knowledge within the steering committee and the TM working group.
- It is also foreseen that the pool of TM instructors is subject to change. Therefore, also a train-the-trainer program should be designed for. This program is aimed at getting novice TM instructors up to speed and the start by attending the complete TM, because all TM instructors should have at least the same level of understanding of the entire Test-bed, being the level that a learner has after successful completion of the TM.

5.5. Implementation options

The final TM will be implemented in at least one CoE (i.e. reference implementation), most probably EASS, to assure direct access. Implementations at multiple CoEs is encouraged, as only one implementation is regarded too few and this could improve the findability of the training target groups throughout Europe. At the same time, as few implementations should be done as needed, this makes assuring TM consistency more difficult.

A feasibility analysis will be conducted with the potential CoEs into implementation of the TM, such as at SGSP, JRC/DRMKC and/or SRC PAS. This would assure better coverage across Europe. These CoEs will be given the full training package but they should also have the processes and systems in place to comply with the requirements stated in section 5.3.

To make these other implementations feasible, conditions regarding cost coverage should be taken into account:

- The coverage of the implementation cost should be investigated further in WP954 and should be discussed with each CoE. Potential options foreseen are:
 - The (employers of) the learners pay for the cost.
 - Sponsored cost (like in UN courses).
 - The costs are (partly) subsidized by regional, national or European government.
 - In case the TGM is standardised and organisations are obliged to follow this standard, the TM cost could be paid by the regulatory body (e.g. national government).
- To limit the implementation cost, it is advised that CoEs use as much as possible systems and processes already in place for other training activities. For instance, implementing the TM in an existing LCMS and using the standard student administration system to enrol TM applicants. Apart from saving costs, this also has the advantage that the systems and processes used are not solely implemented for the purpose of the TM but are also kept in place for other (often occurring) training activities.

6. Way forward and recommendations

This report describes the design of the final TM. The next step is to actually create the final TM and to deliver a reference implementation by M66 of the project duration (October 2019) of a sustainable, full training package that goes hand-in-hand with the final TGM Handbook. This section provides an overview of the concrete steps to take to achieve this, as well as the links and interdependencies with other work-packages.

6.1. Schedule of final TM creation

The TGM Handbook and the TM contents are still under development. In the period until M66, two Trials will be executed and the Final Demo will be in its final preparation stage. The design is sufficiently flexible to still include experiences and lessons identified from these activities. Three phases till the final delivery have been defined:

1. **Content creation phase 1:**

In this phase the draft versions of the (sub-)sessions are developed according to their designs as documented in section 4.

2. **Content creation phase 2:**

This phase starts on 7-8 May 2019 with a TM working group meeting in which all draft contents and the structure are reviewed, finalization actions are agreed upon. The final contents are then made according to these agreements (e.g. recording of e-lectures, creation of assignments and writing of instructor notes).

3. **Implementation phase:**

Finally, implementation of the TM is to be done at the CoE(s) hosting the final TM. This phase at least contains the milestone of delivery of the full training package and reference implementation, but could be elongated in case the TM is implemented at multiple CoEs.

Next to these three phases, a fourth piece of developments is foreseen:

4. **Sustainability actions:**

This development phase contains of three activities, namely to promote the full Test-bed, of which the TM is a part, to commence erection of a steering committee and pool of TM instructors and to contribute detailing a cost coverage structure for the Test-bed.

A more detailed overview of this development schedule is given in Annex 6.

6.2. Connections with other work-packages and overall project's sustainability

The final TM is delivered hand-in-hand with the final version of the TGM Handbook. Therefore, task **T924.1** is closely linked with **WP922** in which the TGM Handbook is being developed by means of an iterative, agile approach. This agile approach provides the ability to continuously align the handbook and the TM with each other. Special attention needs to be paid by both **WP922** and **T924.1** on the following aspects:

- Consistent/recognizable table of contents.
- Consistency in wording and visuals.
- Correctness of TM contents (i.e. the TGM Handbook is leading).
- Awareness that handbook in itself is training material, especially for learners who learn effectively when reading about a topic, although it is only 1-direction knowledge transfer (i.e. not assessing achieved learning outcomes).

The training content of TM's sessions regarding tools, should be correctly explaining and depicting the final versions of these tools as being developed in their respective work-packages of **WP923** and **SP93**. For instance, a tutorial video of the TGT should depict the interface of the final TGT and not that of an intermediate development version. Furthermore, documentation regarding the process to connect

solutions with the test-bed infrastructure, as developed in **SP93**, can be used directly as developer documentation aimed at target group 4 (i.e. developers and technicians). The TM working group should keep an open eye for such supportive documentation developed in **WP923**, **SP93** or in organization activities of Trials 3, 4 and the Final Demo (i.e. **WP945**, **WP946** and **WP947**).

TGM and Test-bed infrastructure support will be provided from **WP922** and **T924.2** to Trials 3, 4 and the Final Demo. The TGM support diary, as summarized in section 3.1.2 will therefore continue to grow. The new information in this diary should be taken into account during the creation of the TM content.

An important link between **T924.1** and **SP95** with regards to the TM's sustainability falls within the sustainability task-force (**WP954**). The following topics will be jointly addressed:

- Promotion and findability of the DRIVER+ Test-bed. This promotion is needed so that (other) institutes would organise new Trials. New Trials being executed, assures that the TGM and the supportive tools and methods are continued to be used, which in their turn lead to the use of the TM. These promotion activities should run via **WP952**, leading all dissemination activities, but it is in fact an effort to assure sustainability of the complete pan-European Test-bed.
- Cost coverage for hosting, administration, contact-phase execution and maintenance of the TM. This should be taken up in the larger effort to create a viable business model for all aspects of the Test-bed, and feeds into the discussion of the establishment of CoEs.
- Establishment of (a cluster of) CoEs, with at least one (also) mainly focussing on training, having implemented the TM and keeping the TGM up-to-date.
- Assuring self-sustainable groups of TGM experts and instructors. It is recommended to assemble a steering committee to guide developments in the TGM and its supportive tools and methods, to create a team of TM instructors and to keep up a train-the-trainer program to assure sustainability of both groups of experts (see section 5.4). These processes might be envisioned useful for more personnel functions within Centres of Expertise (e.g. technical consultants that can assist other organisations setting up a new Trial).

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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 the 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 updated⁴. 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
Evaluation	Process of estimating the effectiveness, efficiency, utility and relevance of a service or facility	ISO 5127:2017(en) Information and documentation — Foundation and vocabulary, 3.1.3.02.
Gap	Gaps between the existing capabilities of responders and what was actually needed for effective and timely response.	Project Responder 5, Homeland Security, Science and Technology, August 2017.
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.
Practitioners	See: Crisis Management professionals: Person with knowledge, experience or ability needed to effectively and timely respond to crisis in order to minimize damage to society.	Initial DRIVER+ definition.
Societal Impact Assessment	The process of identifying, analysing and managing intended and unintended (positive or negative) societal consequences.	Initial DRIVER+ definition.

⁴ The Portfolio of Solutions and the terminology of the DRIVER+ project are accessible on the DRIVER+ public website (<https://www.driver-project.eu/>). Further information can be received by contacting coordination@projectdriver.eu.

Terminology	Definition	Source
Test-bed	The software tools, middleware and methodology to systematically conduct Trials and evaluate solutions within an appropriate environment. 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.	Initial DRIVER+ definition.
Test-bed infrastructure	The software tools and middleware to systematically create an appropriate (life and/or virtual) environment in which the trialling of solutions is carried out. The Test-bed infrastructure can enable existing facilities to connect and exchange data.	Initial DRIVER+ definition.
Trial Action Plan (TAP)	The main Trial planning document, facilitating collaborative planning and supporting execution of the Trial. It covers all areas related to the Trial organization and is 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.
Trial Guidance Tool (TGT)	A software tool that guides Trial design, execution and evaluation in a step-by-step way (according to the Trial Guidance Methodology) including as much of the necessary information as possible in form of data or references to the Portfolio of Solutions.	Initial DRIVER+ definition.

Annex 2 - Description of the previously delivered Training Module versions

Training into how to best use the TGM and the Test-bed Infrastructure, were previously delivered in two ways:

1. **Consultancy-based TGM support** in a pragmatic issue-answer structure to the committees of Trials 1 and 2, mainly in the period Oct 2017 – Oct 2018, as the TGM was at that time still very much under development. This work was reported in the TGM support diary. Parts of this support serve as the first version of the Training Module contents.
2. **Training Module version 2 (TMv2)**. Its design is documented in **D924.11 Materials for the Training Module I**. TMv2 is primarily aimed at the committee members of Trials 3 and 4 and the Final Demo. Its e-learning part is available as of 01/10/2018 and its contact-phase was executed on 7-8 November 2018.

This annex provides a concise description of this second delivery: the Training Module version 2. It is this version on which the feedback as described in section 3.1.1 is collected. And the contents of this version serve as a base and source of inspiration – but to be updated and highly improved - for the final TM.

Be aware that this annex only describes the TMv2. It does not contain the training contents itself, as these contents are using far more effective training delivery methods than only written text with pictures, but are for instance delivered via e-lecture videos followed by a group assignment.

Blended approach of TMv2

TMv2 consists of both an e-learning part and an instructor-led contact-phase, as training how to apply the TGM best is seen as too complex to be correctly conveyed using e-learning only and because learners have expressed that they would feel more comfortable using the TGM when the TM (also) offers face-to-face contact with fellow learners, other Trial organisers and TGM experts.

EASS's Moodle platform is used to host the e-learning part and the instructor materials for the contact-phase. This platform was also used for account creation of all learners and instructors, and to restrict access to the contact-phase materials to instructors only. Accounts were made available only to DRIVER+ project partners, as the TMv2 is not the final training outputted from the project and because during launch of the TMv2, the TGM and the supportive tools were still under development.

TMv2 e-learning part

The e-learning consists of six sessions. Learners were suggested to go through these sessions in this order, but were left free to go through them in a different order or to skip parts (e.g. because they were only interested in the technical aspects of the Test-bed Infrastructure). To have a full view on these e-learning sessions, please visit the TMv2 on EASS's Moodle platform using the hyperlink and credentials provided in the following sub-section.

User-credentials for access to TMv2 e-learning part

The generic user account provided below is available for readers interested to review the full contents of the TMv2 e-learning part. Note that as this document is a public deliverable and because the TMv2 will not be the final project's output, this user account will be ended on 31/12/ 2019.

URL to Moodle portal: <https://moodle.hitsa.ee/course/view.php?id=21956>.

User name: digitiim.sisekaitse.

Password: Moodle.Sisekaitse123.

Contents of the e-learning

- **Session 1: Introduction to the e-learning module.**
 - Introduction video explaining DRIVER+, the concept of a Trial, the TGM and this training module.
 - Individual assignment to write down the benefits the TGM can bring to the learner's organisation.
 - Short quiz about the main TGM concepts.



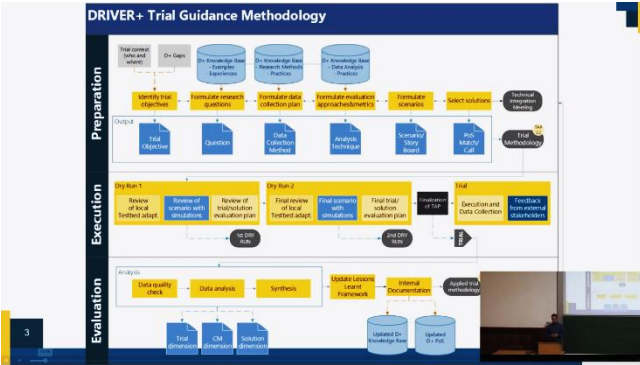
Figure A1: Stills from the introduction video

- **Session 2: The context of Trials – Why, Who and What?**
 - E-lecture introducing the session and explaining the context of a Trial.
 - Quiz into the similarities and differences between Trials and exercises.
 - E-lecture about the Trial objectives, CM gaps and considerations for scenario creation.
 - Individual assignment to write down the learner’s first idea for a Trial.
 - E-lecture about the three dimensions of a Trial, Base-line and gap selection.
 - Documents regarding gap selection and the 21 validated CM gaps.
 - Individual assignment to select 1 or 2 applicable gaps for the learner’s own Trial idea.
 - E-lecture about the practical context of a Trial and the personnel needed.
 - E-lecture summarizing this session and explaining the take-home assignment.
 - Take-home assignment and forum to work out their own Trial idea and to share it as preparation for the contact-phase.

Figure A2: Stills from e-learning Session 2

● **Session 3: Preparation of the Trial**

- E-lecture introducing the session and explaining how and why the TGM was developed.
- Individual assignment to write down why to do a Trial.
- E-lecture about Step 0: CM gap selection and setting the Trial’s context.
- Individual assignment to select gaps and to draw a preliminary base-line.
- E-lecture about the six-step approach.
- Individual assignment to select one gap and to design a mini-Trial around it, going through the six-step approach.



DRIVER+ Trial Guidance Methodology

The flowchart is divided into three main phases: Preparation, Execution, and Evaluation. Preparation includes identifying trial objectives, formulating research questions, formulating data collection plans, formulating evaluation approaches/metrics, and selecting solutions. Execution involves reviewing local methods, reviewing local simulation evaluation plans, final review of local methods, final review of local simulation evaluation plans, and final trial evaluation. Evaluation includes data quality check, data analysis, synthesis, and final documentation.

The TGM 6 Step Approach: Step 0

For which problem and for whom are you looking a solution for?

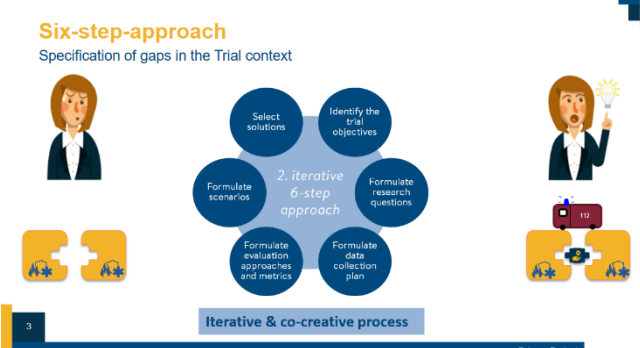
1. List of GAPS to be (possibly) addressed in the Trial.
2. Draw an initial baseline to be addressed in the Trial

Grading summary

Participants	22
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Six-step-approach

Specification of gaps in the Trial context



2. iterative 6-step approach

Iterative & co-creative process

Step 3. – Formulate Data Collection Plan

How can data be collected? And which data to collect?

- Make a plan on how to measure the impact of the trialed solutions on the depicted CM baseline
 - What kind of data is needed?
 - How much data is needed?
 - How can biases be reduced?
 - ...

➢ “evacuation time”
 ➢ “significant amount tweets”
 ➢ “use of artificial data”

Plan who measures what, when, where and how in

Figure A3: Stills from e-learning Session 3

● **Session 4: Execution of the Trial.**

- Voice-over e-lecture introducing the session.
- Voice-over e-lecture about achieving readiness for execution.
- Quiz about readiness for execution.
- Voice-over e-lecture about the dry runs.
- Voice-over e-lecture about assessment concerns and final adjustments.
- Voice-over e-lecture about reviewing the Trial’s final readiness.
- Quiz about the stages of the execution phase.

EXEMPLARY TRIAL
SIMPLE ONE SOLUTION TRIAL

5

DRIVER+ Project

Driver +

Dashboard / My courses / Stekbebaakademia / International courses / Driver / Session 4 Execution of trials / QUIZ: Achieving readiness for execution / Preview

Question 1

Pluralism phase: only (checkbox) to create script ready
(Do the story episodes & episodes to a case, and other again 4, with actor attributed to actors and tech prepared (start, start, start, start, start)?)
(Is the (checkbox) of the mentioned above required to enter an execution phase?)

True
False

Question 2

Execution phase entry checked: Platform required, adapted and tested
(Is the (checkbox) of the mentioned above required to enter an execution phase?)

True
False

Question 3

Pluralism phase: only (checkbox) Content information (start) integrated and tested
(Is the (checkbox) of the mentioned above required to enter an execution phase?)

True
False

TESTING THE TRIAL:
TRIAL OBJECTIVE PERSPECTIVE

Opportunity to gather feedback about the trial design:

- ✓ If information provided to participants were sufficient to be able to use the solution(s) effectively?
- ✓ If questionnaires were clear and well designed?
- ✓ If set measurements for KPI's are doable? Will observers be able to capture it?
- ✓ If the focus group session provided insight in the use of the tool and the added value?
- ✓ If level of difficulty between episodes is well adjusted?

You **SHALL** run the trial with some participants (to receive feedback about the design of the trial and the scenario). However you **SHOULD** invite students or befriended practitioners not to bias your target audience.

8

DRIVER+ Project

Driver +

Dashboard / My courses / Stekbebaakademia / International courses / Driver / Session 4 Execution of trials / QUIZ: Stages of the Execution Phase / Preview

Question 1

Assign the following activities to the appropriate periods of the Execution Phase (before Dry Run 1, between Dry Run 1 and Dry Run 2, between Dry Run 2 and Trial).

Changing the allocation of human resources between tasks: Choose...

Adding a new technical solution to the trial: Choose...

First practical implementation of the technical solution in trial targeted environment: Choose...

Slightly changing an episode: Choose...

Reprinting the agenda to correct a major mistake: Choose...

Adding a wonderful episode that would fit really well to one of the solutions: Choose...

Finish attempt

Figure A4: Stills from e-learning Session 4

● **Session 5: Evaluation of the Trial.**

- E-lecture about the evaluation phase: data check, data analysis, data synthesis and reporting the Trial conclusions.
- Information about the contact-phase assignment regarding data analysis.
- Information about the contact-phase assignment regarding answering the research questions.
- Information about the contact-phase assignment regarding reporting the conclusions of a fictive example Trial.

Figure A5: Stills from e-learning Session 5

- **Session 6: Supportive tools.**
 - **Session 6.1: Portfolio of Solutions.**
 - Tutorial video explaining the aims of the PoS and how to use its interface.
 - Quiz about the Portfolio of Solutions.
 - **Session 6.2: Trial Guidance Tool.**
 - Tutorial video explaining the aims of the TGT and how to use its interface.
 - Quiz about the Trial Guidance Tool.
 - **Session 6.3: Trial Action Plan.**
 - Tutorial video explaining the aims of the TAP and how to use this template document.
 - Quiz about the Trial Action Plan.
 - **Session 6.4: Test-bed Infrastructure.**
 - Explanation video explaining the main components of the infrastructure, aimed at everybody involved in the organization of a Trial.
 - Explanation video explaining the extra develop components, aimed at developers involved in the organization of a Trial.

driver+ About Portfolio of Solutions

Driver +
Dashboard / My courses / Sisekaitseakadeemia / International courses / Driver / Session 6: Tools (Guidance Tool)

Question 1
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What does Guidance Tool do?

Select one or more:

- a. It implements the DRIVER+ Trial Guidance Methodology.
- b. It helps the Crisis Management practitioners to design, conduct and assess trials.
- c. It helps CM practitioners to find solutions relevant to their trials.
- d. It helps with defining trial context and managing trial team.

TAP CHAPTERS

1. Purpose and scope of the document
2. General information on the Trial
3. DRIVER+ methodology application
4. Trial planning
5. Local Platform facilities
6. Solutions utilization and assessment
7. Trial scenario building
8. Organisation and logistics
9. Other organizational aspects

TAP Trial Action Plan

TRIAL PREPARATION

Scenario Management Tool → Common Information Space / Common Simulation Space → Simulators → Observer Tool / After Action Review Tool

Figure A6: Stills from e-learning explaining the supportive tools

TMv2 contact-phase

The contact-phase consists of seven sessions, each session consisting of presentations and assignments executed in multi-disciplinary groups (i.e. committee members and other project partners mixed in 4 groups). The total duration of the contact phase is 7 + 4 hours.

- **Session 1: Introduction and the context of Trials.**
 - Presentation providing an overview of the contact-phase sessions.
 - Plenary session collecting expectations of the participants for the coming 1.5 training days.
 - Presentation repeating the main aspects of a Trial.
 - Group-assignment to jointly discuss Trial ideas submitted as take-home assignment in the e-learning, this group assignment is mainly aimed at a try-out of the group process.
- **Session 2: Evaluating a Trial.**
 - Presentation regarding evaluation phase in general and data collection and analysis.
 - Group assignment into data analysis.
 - Presentation regarding visualisation of results.
 - Group assignment into result visualization.
 - Presentation regarding answering the research question and dissemination.
 - Group assignment into dissemination.
- **Session 3: Preparation of a Trial.**
 - Presentation repeating the main aspects of the preparation-phase (i.e. six-step approach).
 - Group assignment to discuss each other's Trial designs.
 - Group assignment to discuss lessons learned from previous Trials w.r.t. own Trial design.
- **Session 4: Practical preparations and execution of a Trial.**
 - Presentation repeating the steps inside the execution phase.
 - Open question and answer session regarding specific Trial issues.
- **Session 5: Portfolio of Solutions & Guidance Tool.**
 - Instructor-led guidance through the online Trial Guidance Tool interface.
- **Session 6: Technical preparations for a Trial.**
 - Presentation regarding the technical preparation steps and interdependencies with scenario creation.
 - Open question and answer session regarding specific Trial technical issues.
- **Session 7: Review of the contact phase.**
 - Trial specific questions and answers sessions with TGM experts.
 - Plenary review of the expectations aired in session 1.

Annex 3 - Detailed overview of feedback received on previous versions of the TM

This annex provides a detailed overview of people who have provided feedback on previous versions of the TM, the feedback received and solutions envisioned to solve the issues reported. Table 2.1 lists all people, from whom feedback is received, including the statement and “*External to DRIVER+ consortium*” in case they are not involved in activities inside the project (note that some of these externals are colleagues of DRIVER+ staff while others are from external organisations).

Table A2: List of people who have provided feedback

Feedback provider	Organisation	Roll in the organisation
Gerald Schimak	AIT	Trial 3 owner
Georg Neubauer	AIT	Senior Scientist
Thomas Seltsam	ARC	Trial 3 host
Camilo Palacio Ramirez	ARC	Trial 3 host
David Wran Schumer	ARC - Styria	<i>External to DRIVER+ consortium</i> Department Head of Disaster Management
Andreas Seipelt	ARTTIC	SP95 lead
Gunnar Schwoch	DLR	Trial 4 owner
Christian Niermann	DLR	Project manager
Elisa Schroeter	DLR	Trial 4 owner
Alexander Scharnweber	DLR	Research Scientist
Louise Juul Hansen	DRC	Senior Communication Officer
Pia Ringsted Blum	DRC	Psychological first aid instructor
Tarmo Kull	EASS	Lecturer
Kristjan Sirp	EASS	<i>External to DRIVER+ consortium</i> Head of International Relations and Development
Hector Naranjo	GMV	Solution coordinator Trial 1
Cor-Jan Vermeulen	HKV	Consultant
Kees de Gooijer	HKV	Business developer ICT
Carolien Wegman	HKV	<i>External to DRIVER+ consortium</i> Consultant
Chiara Fonio	JRC	SP92 lead
Chaim Rafalowski	MDA	Disaster Management and EU Projects Coordinator
Ronald Christiaans	Police Academy of the Netherlands	<i>External to DRIVER+ consortium</i> Chief Digital Simulations Officer
David Lund	PSCE	Project Coordinator
Jean De Preter	PSCE	Communications manager

Feedback provider	Organisation	Roll in the organisation
Rafał Wróbel	SGSP	<i>External to DRIVER+ consortium</i> Lecturer
Tomasz Zwęgliński	SGSP	Trial 1 owner
Karolina Trzebinska	SRC PAS	Final Demo owner
Joanna Tymińska	SRC PAS	SP94 lead
Jakub Ryzenko	SRC PAS	Head of Crisis Information Centre
Andre de Rond	SRH	Trial 4 host
Laurent Dubost	TCS	Solutions coordinator Trial 2
Doreen Gropmann	Technical University Berlin	<i>External to DRIVER+ consortium</i> E-learning technologist
Edith Felix	THALES	Project manager
Erwin Rouwenhorst	THG	Trial 4 host
Marijn Rijken	TNO	DRIVER+ project manager
Marcel van Berlo	TNO	DRIVER+ Technical Coordinator
Dirk Stolk	TNO	Senior Project Leader
Alice Clemenceau	Valabre	Trial 2 owner
Frédérique Giroud	Valabre	Trial 2 owner
Maurice Sammels	XVR	Project manager
Drazen Ignjatovic	AIT	<i>TM working group</i>
Tim H. Stelkens-Kobsch	DLR	<i>TM working group</i>
Kaisa Kägu	EASS	<i>TM working group</i>
Marek Link	EASS	<i>TM working group</i>
Hanneke Vreugdenhil	HKV	<i>TM working group</i>
Emil Wrzosek	SRC PAS	<i>TM working group</i>
Adam Widera	WWU	<i>TM working group</i>
Nicola Rupp	WWU	<i>TM working group</i>
Steven van Campen	XVR	<i>TM working group</i>

The summary of the feedback and solutions envisioned to solve the issues mentioned is divided in three themes: general comments (Table A3), e-learning (Table A4) and contact-phase (Table A5). These summaries are based on individual reports via e-learning, (anonymous) feedback collected during the contact-phase and interviews with project-external experts. As contact-phase feedback was provided anonymously, it is not possible to completely pinpoint which person with a certain background provided which feedback. The choice to collect feedback anonymously was made because the feedback was requested in a plenary session using a feedback collection web application. Requesting this assured sufficient time and motivation for the contact-phase participants to send in their feedback. Anonymity in this collection process assured a safe atmosphere to provide (constructive) feedback.

Table A3: General feedback received and solutions envisioned

Feedback	Solution
Platform	
The log-in procedure at the Estonian Moodle is long, complicated and time-consuming.	The Estonian Moodle is not designed for international courses outside of Estonia. All learners should be registered, to be able to track the progress and to give feedback. We will implement the last version of the TM in Moodle. For the sustainability of the TM the e-learning should be transferred to a more suitable platform. Our suggestion is the e-learning platform to be implemented and maintained by the CoE.
Moderation of e-learning course	
Will the course be automatic? Who will moderate the course once the Driver+ project has ended?	Even if the course itself is mostly automatic, the learning environment needs technical support, support in case of problems. We will design the e-learning course as automatic as possible, but there are some sessions in which the learner needs the trainer's feedback and assistance. CoE should provide feedback, assistance for learners.
Roll dependent learning	
The course is designed "one size fits all", but not all the learners need to know all the details of the TGM.	The final version of the TM is roll dependent. The learner will be given a list of topics to be studied based on the user's profile (Trial organizer, solution provider, developers and technicians). The overall overview of the TGM for people interested in the topic is short and compact.
Sections	
Current e-learning and TGM handbook sections do not go hand-in-hand. I did not see any links and connections with other TM elements, nor with the TGM document.	The final version of the TM will be aligned with the TGM Handbook. There will be direct links between TGM and TM.

Table A4: Feedback received on the TMv2 e-learning part and solutions envisioned

Feedback	Solution
Overall comments	
The overall length of the e-learning is too long, not interactive and interesting. There are too many presentations.	The final version of the TM will be shorter due to roll-dependent e-learning. We will use shorter videos, presentations and interactive presentations
Technical aspects	
Offer a forum for discussions with a trainer providing feedback	Forums for discussion will be provided to learners. Feedback from the trainers will be provided by the CoE.

Feedback	Solution
The view of the course is not comprehensive.	The view of the course was designed to give a broad overview of the course.
Use the same personas for the user-story.	Personas will be designed and added to the user-story for the final version of the TM.
Provide subtitles for every EU-country.	The usage of the subtitles is to be discussed by the sustainability board and the CoE.
Content	
Repeat the 'heart beat' of the methodology.	The heart-beat of the methodology will be repeated throughout the methodology. There will be videos describing the heartbeat of the methodology and giving an overall overview.
Add training objectives and the amount of time it takes to conduct the e-learning/contact phase.	The training objectives are also in the current training module. An overall assumption on time based on the user role will be added.
Provide interfaces to contact other learners and Trial-organizers.	Session 6 „Pan-European networks and references“ is added to the content of the sessions to provide contacts to other learners and Trial organizers.
Gather learn-group specific questions and answer them in the contact-phase	The trainers will gather specific questions from forums and discussions in the e-learning part. The trainers will also have a list of topics and assignments to be implemented in the contact-phase
Include experiences from previous Trials. Use as examples 2-3 user-stories (2 organizers + 1 tech developer) throughout all e-lectures.	A user-story based on Trial 1 will be implemented and other examples as well to illustrate on how to do a Trial.
Videos	
Videos are too long and not consistent in quality. The voice-over should be done by a native speaker or with someone with very good English.	All the videos will be done again. The videos will be 10-20 minutes long and there will be 1-2 presenters with good English skills.
Teaser videos.	
Trigger curiosity to the TGM and tease about its usefulness. Teaser videos should be made for each session (maybe the session holder could do the introduction).	There will be one video to trigger curiosity about the usefulness of TGM and TM.
Assignments – content	
All the quizzes should be done the same way and not too easy; if the learner does not pass a quiz, the learner will not be able to continue. Use pictures.	The quizzes will be standardized so, that the same type of topics have the same type of quizzes. There will be no restrictions on moving forward when the learner will not complete the quiz.
Assignments – feedback	

Feedback	Solution
The assignments should be developed in a way that feedback is provided during the assignment (what are the right answers and why). A user-story will be helpful in doing this. Be very clear about which answers given/selected are correct (and why) and which ones are not (and why). The quizzes should have automatic feedback. It is important, that the e-learning is also sustainable after the project has ended.	Automatic feedback will be implemented as much as possible for the sustainability. Feedback must be clear and easily understandable.
Assignment forums for discussion	
Forums shouldn't be empty at the start, as this demotivates to fill them (few people want to be the first to start a discussion or to ask questions). Old content also demotivating, so maybe we have to think about regular update-checks.	Forums will be left open.

Table A5: Feedback received on the TMv2 contact-phase and solutions envisioned

Feedback	Solution
Trainer	
Who will be the trainer of the contact-phase?	The trainers should be provided by the CoE.
Target group	
Why do all the participants (CM innovators and practitioners) take part in the contact phase?	The final version of the TM is roll dependent. The learner will be given list of topics to be studied based in the e-learning as well as in the contact-phase based according user's profile (Trial organizer, solution provider, developers and technicians).
Tutorial for teachers	
The teacher should have a tutorial ready for the contact phase. In the tutorial the essentials steps are elaborated, the assignments are provided with the right answers, links to cases, etc.	The trainers will have a list of topics and assignments to be implemented in the contact-phase. Also a structure on how to conduct the contact-phase and how will be provided.
Content of contact-phase	

Feedback	Solution
<p>Explain the structure of training and contact phase in the beginning (expectation management), highlights: what should not be missed or left out; what is optional, explain the inherent logic of TGM, use live Trial examples (video's, data, interviews, etc). Discussions/cocreation/exchange of experiences have been appreciated and should be encouraged in the contact phase. Provide enough breaks in between the intense group assignments/workshops. For example, better schedule 2 days of 6 hours, than 1.5 days of 8+4 hours.</p>	<p>Trainers will be provided list of topics and explanations on how to conduct the contact-phase.</p>

Annex 4 - Training delivery methods suitable for the final TM

This annex describes the training methods as found suitable for either the TM's e-learning part or contact-phase in more detail, thereby serving as extra information for the suitable training delivery methods, as listed in section 3.4.2. The descriptions of the methods described in this annex stem from education theories by Kolb (5) and Biggs (6) and descriptions of teaching methods documented by Bourner (7) and Illeris (8).

For e-learning:

- **Video** – fit for introducing a topic or providing an example in a very appealing method via 1-directional knowledge transfer to the learner. Usually lasting for not more than 10 minutes. Examples are a project's dissemination output or a video from Youtube.
 - + Appealing due to high-quality visuals.
 - + Especially effective for visual learners (i.e. those who learn most effectively when seeing a visual about the topic).
 - + No opportunity for learner to respond.
 - + No opportunity to check/test knowledge transfer.
 - + Little effort to include if pre-existing (e.g. from online source or from another project).
 - Hard to find pre-existing video content that exactly matches the needs.
 - Very time- and resource-consuming, if it has to be edited or created from scratch.
- **E-lecture** – fit for explaining a topic in a basic up to very detailed level. Usually footage of both the lecturer and his/her presentation slides and/or blackboard writings. Intended for 1-directional knowledge transfer to learner. Examples are a video-recording of a real-life lecture or a specifically recorded video of just the lecturer/presenter and the slides/visuals.
 - + Coherent with educational experience of most learners at the age of 25 and up.
 - + Suitable and feasible for a wide range of basic and advanced topics.
 - + Can create a basic interpersonal bond between presenter and learner.
 - + Especially effective for audio learners (i.e. those who learn most effectively when a topic is presented to them).
 - No opportunity for learner to respond.
 - No opportunity to check/test knowledge transfer.
 - Learner motivation highly dependent on length and presenter quality.
 - Easy to convert an existing lecture into an e-lecture (i.e. from the content point of view).
 - Requires moderate investments in time and resources for capturing and editing, due to static camera viewpoints. Some academies and most universities have such in-house facilities.
- **Presenter slides with voice-over** – similar as e-lecture, but without a video capture of the presenter. Usually containing a scripted, professional voice-over.
 - + Suitable and feasible for a wide range of basic and advanced topics.
 - + Especially effective for audio learners (i.e. those who learn most effectively when a topic is presented to them).
 - No opportunity for learner to respond.
 - No opportunity to check/test knowledge transfer.
 - Learner motivation is highly dependent on the length and quality of the slides and voice-over.
 - Easy to convert an existing lecture into slides with voice-over.
 - Moderately time consuming to create high-quality slides and voice-over text.
- **Video interviews** – fit for 1-directional knowledge and experience transfer between the expert being interviewed and the learner. Usually a scripted video of 5-30 minutes between the interviewer and one or more persons being an expert or having first-hand experience in the topic to be trained. Often used to convey example cases, but it can also contain basic explanations, more advanced in-depth contents and advices/suggestions. Examples are interviews with specific

methodological experts, persons who have implemented/used a tool before, or persons who have organised a similar event before.

- + Especially suitable and feasible for providing examples.
- + Appealing as it can create a basic interpersonal bond with the learner, as the learner can relate themselves with the interviewee.
- + Especially effective for audio learners (i.e. those who learn most effectively when a topic is presented to them).
- No opportunity for learner to respond.
- No opportunity to check/test knowledge transfer.
- Little effort to include if pre-existing (e.g. interview about example pre-made for other aims).
- Hard to find pre-existing interview content that exactly matches the needs.
- Requires moderate investments in time and resources for capturing and editing, but requires good scripting of interview in advance.
- **Explanation (i.e. animated video explaining a topic)** - fit for a concise explanation of a topic provided in a 1-directional knowledge transfer to a learner in a very appealing, contemporary manner. Usually following a user-story and lasting for not more than 5-10 minutes. Examples are cartoon-like animations on Youtube explaining a method, the workings of a commercial service or explaining an important historic event in a funny way.
 - + Appealing due to high-quality visuals and sense of humour.
 - + Especially effective for visual learners (i.e. those who learn most effectively when seeing a visual about the topic).
 - No opportunity for learner to respond.
 - No opportunity to check/test knowledge transfer.
 - Little effort to include if pre-existing (e.g. from online source or from other project).
 - Very time- and resource-consuming, if it has to be edited or created from scratch.
- **Tutorial videos** – fit for explaining interfaces of products and software applications and for providing a step-by-step guide to resolve issues with these. Providing a 1-directional practical ability-transfer to learners. Examples are Youtube tutorials in how to use the headings functionality of MS Word, how to apply smoky eye make-up or how to code an automatic photo-editing script in Adobe Photoshop.
 - + Suitable and feasible for explaining step-by-step guides into a wide range of functionalities and issue solving processes.
 - + Easy for the learner to scroll back and forth when running it in parallel with using the tool.
 - No opportunity for learner to respond.
 - No opportunity to check/test knowledge transfer.
 - Used nowadays to explain the workings of most consumer products and software applications, and therefore often expected to exist for such products.
 - Moderately easy to create in high-quality with screen capture software or a video camera, a well thought-over script and by using a professional voice-over.
- **Checklists, user manuals and other written and visual documentation** – fit for providing written explanations (i.e. 1-directional knowledge transfer to learner) and for providing reference to more advanced topics or to topics/tools/methods used less often. Examples are a checklist for a methodological step, a user-manual for a software application or a deliverable document that serves as an example of a previous Trial.
 - + Especially effective for text learners (i.e. those who learn most effectively when seeing a visual about the topic).
 - + Can also be used easily when applying the topic after conducting the e-learning (e.g. in assignments or when organising a Trial)
 - Ineffective for knowledge transfer for visual, audio and experience learners.
 - No opportunity for learner to respond.
 - No opportunity to check/test knowledge transfer.

- Learner motivation is highly dependent on the length and author quality.
- Little effort to create and include, especially concerning deliverables and documents already created for other purposes.
- **Quizzes and tests** – fit for providing short, interactive intermezzos between 1-directional knowledge transfer sections. Can come in the form of a single question to trigger learning awareness up to a full list of questions to answer, thereby to check the level of knowledge transfer. Usually, upon submission of the answers, feedback is directly provided to the learner, stating the amount of questions answered (in)correctly and if needed providing advice to re-visit some specific topics or directing the learner to in-depth sections. One example is a short quiz presented in the middle of an e-lecture in which the learner has to link terms with their correct definition or put the phases of a process in the correct order. Another example is a full test at the end of a session, in which several questions are presented regarding the reasons for and correct order of the steps in the evaluation phase.
 - + Provides the ability to automatically check the level of knowledge transfer achieved.
 - + Provides direct feedback to the learner of his/her current level of knowledge transfer and why the selected answers are (in)correct.
 - + Can provide learner-specific directions to advanced, in-depth topics.
 - Not effective for knowledge transfer in itself, but links to knowledge transfer sessions can be given.
 - Whether a quiz or test functions (de)motivating the learners to continue depends on the formulation and difficulty level of the questions and of the tone-of-voice of automatic feedback provided for (in)correct answers.
 - Only possible when feedback can be provided automatically and thus only possible for questions that have a clearly correct and incorrect answers.
 - Most e-learning platforms provide functionality for easy creation of quizzes and tests.
- **Individual assignment** – fit for providing a more complex question/assignment to learners than possible via a quiz question with automatic feedback. This type of assignments is usually used for question with a less clear (in)correct answer and are therefore often graded by an instructor (i.e. human-in-the-loop grading system and thus not automatically by the e-learning system). Examples are questions asking a learner to write down his/her own expectations or ideas for a Trial or an assignment to use a previously method him-/herself to analyse an example case.
 - + Allows instructors to check the level of knowledge transfer in detail.
 - + Provides feedback to the learner.
 - In case instructors have to grade the answers submitted, there will be a delay between the submission and the learner receiving feedback (including directions to revisit a topic or to follow an in-depth sub-session).
 - Not effective for knowledge transfer in itself, but instructor feedback can link (back) to knowledge transfer sessions.
 - Only applicable for assignments that takes the learner no more than 1-5 minutes to write down his/her answer, or else it would break the learners progress in the e-learning too much.
 - (De)motivating aspect of the feedback depends on the delay between the submission of answers and the feedback received and the tone-of-voice of feedback provided.
 - Most e-learning platforms provide functionality for easy creation of free text assignments.
- **Take-home assignment** – similar to individual assignments, but should be used for more complex tasks requiring the learner more than 5 minutes to complete. Instructors also need considerable time to grade the submitted answers/reports. Examples are a task to create an evaluation report based on sample data or the task to prepare a mini-Trial around a given baseline and CM gap. A take-home assignment could also function as a test or exam, but note that when this test functions as a pass/fail mechanism for (a part of) the e-learning course, measures must be put in place to restrict improper ways to pass the test (e.g. plagiarism).
 - + Allows instructors to check the level of knowledge transfer in detail.

- + Provides detailed feedback to the learner.
- In case instructors have to grade the answers submitted, there will be a delay between the submission and the learner receiving feedback (including directions to revisit a topic or to follow an in-depth sub-session).
- Not effective for knowledge transfer in itself, but instructor feedback can link (back) to knowledge transfer sessions.
- (De)motivating aspect of the feedback depends on the delay between the submission of answers and the feedback received and the tone-of-voice of feedback provided.
- Most e-learning platforms provide functionality for easy creation of free text assignments.
- **Discussion forum** – fit for sharing questions, answers, practical advices, submitted (take-home) assignment and feedback amongst learners and between learners and instructors. Examples are a generic question and answer forum, a forum on which learners submit their take-home assignments and can provide constructive feedback to each other's assignments, and a feedback forum in which learners can share their training expectations and feedback how they rate the sessions.
 - + Allows learners to contact each other and develop an interpersonal bond with fellow learners.
 - + Allows learners and instructors to provide (continuous) feedback to each other's work.
 - + Allows learners to ask any question and for learners and instructors to answer these questions.
 - Delay in feedback/replies received on submitted question/assignment can limit the ability for learners to continue.
 - Not effective for knowledge transfer in itself, but answers and feedback can link (back) to knowledge transfer sessions.
 - Correctness of feedback and answers provided by other learners depends on the level of understanding of them and is thus questionable and therefore also treated as such by learners receiving these feedback and answers.
 - (De)motivating aspect of forums depends on the tone-of-voice of replies given by both learners and instructors (e.g. constructive vs. destructive feedback) and thus on the level and speed of moderation.
 - Most e-learning platforms provide functionality for instructors to create and moderate forums and for learners to add messages and files to these forums.
- **Achievements** – fit for marking progression in the e-learning, indicating the level of knowledge and ability transfer and motivating learners to continue or to achieve an even higher level of understanding. In principle, this is a game-tactic, but nowadays ever more used in numerous types of applications. Examples are grading of assignments (e.g. 1-10 score instead of pass/fail), providing a star/medal/gimmick when completing a sub-session or quiz, or listing the top 3 submitted take-home assignments.
 - + Provides learners with a clear insight in their progress and understanding of the training contents.
 - + Motivates learners to continue learning and stimulates outstanding participation and thereby deep understanding of the training contents.
 - + Allows instructors to link the level of understanding with a generically understandable scale (i.e. instead of just a pass/fail).
 - If executed with too many game-like metaphors, it can be perceived childish.
 - Does not transfer knowledge or abilities in itself.
 - Most e-learning platforms provide some kind of achievement functionality.

For the contact-phase:

- **Presentation or lecture** – similar to e-lectures provided via e-learning, but in this case with the instructor being face-to-face with learners. In the core being 1-directional knowledge transfer. Same (dis)advantages and implementation options as for e-lectures, with additional:

- + Learners can directly ask questions (i.e. bi-directional knowledge transfer).
- Considering the 1-directional knowledge transfer core, no effective use of instructor manpower.
- Often used for introduction to interactive assignments and to recapitulate (summaries) of applicable e-learning parts required for these assignments.
- **Question & answer session (Q&A)** – a face-to-face session between learners and an instructor fit for providing tailored answers to questions that have been raised by learners. Preferably, the learners note down the questions in advance (e.g. in the e-learning) for an instructor to well prepare the answers to them. This kind of Q&A sessions are scheduled at both the start (i.e. relating to the pre-completed e-learning) and at the end of a contact-phase (i.e. relating to the topics covered by the contact phase).
 - + Learners can ask questions multiple times and they receive tailored answers.
 - + Instructors can check whether the training content delivered and the answers provided are well understood.
 - + Learners could ask unexpected questions that are hard to answer, if not prepared well.
- **Checklists, manuals, leaflets and other documentation** – completely similar to these types of documentation provided via e-learning. Refer to this e-learning method to see its (dis)advantages and implementation considerations.
- **Individual assignment** – similar to individual assignment provided via e-learning. Refer to this e-learning method to see its (dis)advantages and implementation considerations. Note that during the contact-phase, instructors can provide almost immediate feedback and learners can directly ask guidance during the assignment and directly ask questions when receiving feedback.
- **Group assignment** – fit for triggering joint (multi-disciplinary) work on an assignment. Especially good for topics of analysis and synthesis and for triggering joint discussions amongst several learners. Usually followed by a plenary presentation / discussion / feedback moment. Examples are group assignments to work on data analysis steps, or to reflect on a learner's design of a (mini-)Trial.
 - + Allows instructors to check the level of knowledge and ability transfer in detail.
 - + Provides detailed feedback to the learners, either individually or as a group.
 - + Can stimulate knowledge transfer between multi-disciplinary group members.
 - Not effective for knowledge transfer in itself, but instructor feedback can link (back) to knowledge transfer sessions.
 - Can be de-motivating dependent on group dynamics or can allow learners to pass without actively working in the assignment.
 - Each group could be coached by a facilitator, to prevent group dynamics causing a negative learning experiences for some members of the group.
 - Although most individual and take-home assignments into analysis and synthesis can be converted with relatively little effort into group assignments, one should account for the level of complexity being sufficiently high that all group members have a substantial task to complete the assignment.
- **Plenary discussion** – fit for jointly – meaning both learners and instructor(s) – enriching the knowledge and ability transfer by posing questions or statements, followed by a joint discussion about the different aspects/answers to these. These plenary processes can be observed during the group assignments and Q&A sessions, but can also be executed as stand-alone activities. Examples are a plenary sessions about training expectations, a plenary presentation of (group) assignment results or a plenary discussion about controversial statements posed by an instructor.
 - + Allows instructors to check the level of knowledge and ability transfer in detail.
 - + Provides direct detailed feedback to the learners.
 - + Can stimulate knowledge transfer between multi-disciplinary group members.
 - + Instructors can easily link back to other knowledge/ability transfer sessions and assignments, or can mix up plenary discussions with knowledge/ability transfer intermezzos.

- Can be de-motivating dependent on group dynamics or can allow learners to pass without actively participating in the discussions.
 - Instructors should not only send information and discussion topics, but also facilitate a joint discussion in which all learners participate.
- **Test / Exam** – similar to a test in the e-learning, but providing more time for learners to complete it and allowing instructors to observe the learners during completion (e.g. observe group behaviour or monitor for improper passing strategies).
 - + Allows instructors to check the level of knowledge transfer achieved.
 - + Provides feedback to the learner of his/her current level of knowledge transfer and why the selected answers are (in)correct.
 - + Can provide learner-specific directions to (revisit) specific topics.
 - Not effective for knowledge transfer in itself, but links to knowledge transfer sessions can be given.
 - Usually requiring substantial time for instructors/examiners to grade the submitted answers/reports.
 - Especially used in courses awarding a certificate.

Annex 5 - Explanation of session design template

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 session's design documented in section 4 uses a standardized template, as also shown in Table A6. This annex explains the terminology used in this session design template.

Table A6: Learning template for a TM (sub-)session

Session [number and name]
Target groups and entry requirements
Target groups: [target groups as listed table 3.1]. Entry requirements: [conditions obligatory or advised].
Duration
Duration e-learning/contact-phase: [X-X min].
Learning objectives
Have a <u>knowledge</u> or <u>understanding</u> of: <u>Knowledge of:</u> <ul style="list-style-type: none"> • [Topic A]. <u>Comprehension of:</u> <ul style="list-style-type: none"> • [Topic B].
Be able to: <ul style="list-style-type: none"> • [Ability C].
Take <u>responsibility</u> for: <ul style="list-style-type: none"> • [Task D].
Learning strategy e-learning
<ul style="list-style-type: none"> • [First item/assignment in basic or advanced part] <ul style="list-style-type: none"> ○ [E-learning delivery method]. • [Second item/assignment in basic or advanced part] <ul style="list-style-type: none"> ○ [E-learning delivery method].
Learning strategy contact-phase
<ul style="list-style-type: none"> • [First item/assignment available to be tailored] <ul style="list-style-type: none"> ○ [Contact-phase delivery method]. • [Second item/assignment available to be tailored] <ul style="list-style-type: none"> ○ [Contact-phase delivery method].
Parts of user-story and examples to be used
<ul style="list-style-type: none"> • Phase/step within the user-story used as illustration in this session. • Other examples used as illustration in this session.

The TM working group has decided to use a training course 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 the European Higher Education standard and Sectorial Qualification Framework for setting up learning content. This Frontex 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 (10)) since the training matches the outcome/competency-based approach. As the TM also has to serve a European CM target group and because the template is proven to work well in the design of the previous TM version 2 and in setting up many different courses within EASS – not only law enforcement related, but also for fire services and/or Crisis Management - it is seen fit as a base for detailing out the design of every session within the TM.

The Frontex course design template has been slightly simplified, leaving out financial and Frontex organizational aspects as this information is considered not relevant for the final TM in the context of future DRIVER+-like Trials and because its implementation can still vary (i.e. next to a reference implementation in EASS's Moodle platform). Terms used in this simplified template are defined in Table A7.

Table A7: Definitions used in the session design template

Term in session template	Definition
Target groups	Listing one or more of the target groups as defined in section 3.2. This does not mean the session is of no use to others, but it is not specifically targeted on others.
Entry requirements	What the learner must know or must have completed before the specific session can be started.
Constraints	Duration estimated it will take a learner to complete this session. Potentially elaborated with other requirements or restrictions to conduct the session with sufficient quality (e.g. resources needed for the session's contact-phase)
Learning objectives	The objectives are the learning outcomes that should be met once a learner has completed the entire session. The objectives are split between what a learner should know, comprehend (i.e. can explain in own words), be able to do, and can take responsibility for so that it is done well (i.e. by himself/herself or by others).
Learning strategy	This section describes how every topic within the session is delivered to the learner in the e-learning and (if applicable for this session) the contact-phase. Refer also to section 3.4.2 and Annex 4 listing suitable training delivery methods for the e-learning and contact-phase.
User-story and examples	Listing the steps/phases within the fictive user-story used to illustrate the session, and listing other examples used for the same purpose. See section 3.4.3 for a concise description of these.

The objectives are formulated as much as possible using Bloom's Taxonomy of measurable verbs (i.e. action verbs) (11). Bloom created a taxonomy of verbs (i.e. categories of verbs), where these verbs show a learner'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.

By having the learning objectives stated using these verbs, these objectives describe which learner behaviour should be observable when the objective is sufficiently met (e.g. the learner comprehends the 3 phases of the TGM when "the learner 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 instructors can evaluate whether a learner can create a good submission of an individual or group assignment, can tailor the follow-up contact-phase well to the specific learner's abilities after the completion of the e-learning, and can measure the effectiveness of the contact-phase. The ability to measure training effectiveness also supports future updates on the TM.

Annex 6 - Development schedule of the final TM

Figure A7 provides a Gantt chart planning overview for the upcoming activities in **T924.1**. Note that “other training package content” in this planning refers to the contents of the training package other than the core contents of the e-learning and contact phase, such as implementation manuals and curriculum descriptions (see also section 5.2).

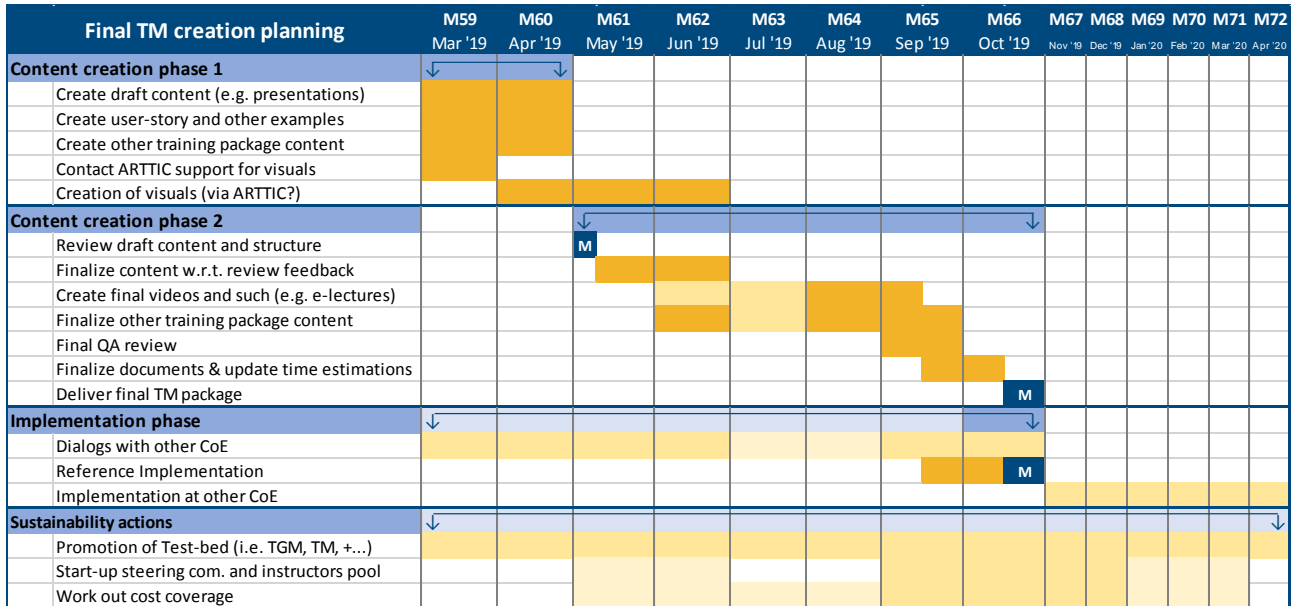


Figure A7: Gantt chart planning for creation activities of the final TM

The following notes are to be made to the four main chunks this schedule consists of.

Content creation phase 1:

- The creation of draft content is to be done based on the designs documented in sections 2 - 4. A dialogue between the workings groups on the TGM Handbook and the TM is to be held early March to assure further alignment between the structures (i.e. table of contents) of both. This is needed so that novice readers/learners immediately recognize the sections in both mediums (e.g. preparation phase section in the TGM Handbook, versus session 2 in the final TM).
- The creation of the user-story and gathering of other examples is a joint effort for the TGM Handbook and the final TM. This assures the quality of the user-story and examples and also efficient production of these.
- For the same consistency and efficiency reasons, the working groups of the TGM Handbook and the TM will together reach out to ARTTIC to request assistance in the creation of professional quality visuals (e.g. icons or videos) within **SP95**.

Content review and creation phase 2:

- A TM review and update meeting is planned at EASS on 7-8 May, 2019. During this meeting the draft content and the TM’s structure will be reviewed in detail and considered in respect with the TGM Handbook contents. For instance, by plenary going through an e-lecture’s draft presentation slides and checking consistency with the applicable handbook section. Agreements will be made on the necessary updates and on the exact practical process to make the final contents (e.g. when, where and with whom to record a video interview).
- Quality assurance of the final TM will be led by DLR, because this project partner is the quality manager of the entire project. They will be particularly included in the final review task of all contents to assure correct use of terminology and to check the written texts and visuals. DLR is already fully included in TM content creation to assure efficient production of these.

- The time estimations to be updated at the end of this phase-, refer to the estimated time (range) it will take a learner to complete a (sub-)session. These estimations will be set most accurately after the content is finalized.

Implementation phase and sustainability actions:

- The reference implementation will probably be done at EASS, because this academy already has many facilitating systems and processes in place (e.g. their Moodle e-learning platform) and - most importantly - has many years of experience in implementing international training courses.
- If dialogues with one or more other potential CoE (see also section 6.2 regarding sustainability) already provide a concrete opportunity date for an extra implementation of the TM before the projects end date, this can be supported because of the delivery of a complete training package in M66. These implementation efforts will then be executed after M66.
- To assure sustainability of the TM, also action must be taken on the establishment of a TGM and TM steering committee – or similar group of experts – and creation of a pool of Test-bed instructors to provide the TM’s contact-phase. This task is directly linked to the creation of other package content, in which train-the-trainers-programs are developed to assure sustainability of these groups of experts. More information about this is given in section 5.4).
- A final note is to be made on the promotion of the Test-bed and thus of the TM and TGM handbook. It is essential to work on this already and - although this is an activity outside **T924.1** - (refer also to section 5) this promotion task is included in the **T924.1** planning.