



DISASTER

Data Interoperability Solution At Stakeholders Emergency Reaction

285069

D7.12 Virtual Training Program (V1)

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Abstract

The bespoke development of a virtual 2 & 3D training programme that shows realistic emergency scenarios, enabling first-responders to train / exercise in a safe and controlled environment. The added value in using the new Data Interoperability Solution provided by DISASTER is shown through expediting the decision making process by enabling access to a “richer” common operational picture by using information and data from other stakeholders involved. The training programme operates on a standard computer and can be undertaken remotely thereby significantly reducing the cost of training and exercises in terms of organising, travel and duty abstractions.

[End of abstract]

Executive summary

The virtual training programme developed by the DISASTER project will add value to two key elements of the project, namely dissemination and exploitation / adoption by end-users. Dissemination and awareness raising, particularly in the user community is seen as vital activity. The design and development of a bespoke training programme was identified as a key element to promote the development of the DISASTER data interoperability solution in an innovative and relevant way.

In these times of economic austerity and shrinking budgets, especially within training, for emergency responders the programme allows for responders from across the EU to train utilising realistic scenarios and experience first-hand the operational benefits of data interoperability during a crisis situation. By allowing these sessions to run on standard computer equipment without the need for significant operational abstractions is seen by end-users as of great importance.

Large scale scenario based training is expensive and time consuming. The DISASTER training programme offers an alternative cost efficient method, which can be used whenever the first-responder wants. This flexibility and adaptability allows it to become a flexible and efficient tool used to address the immediate need of training when new data systems and solutions are introduced.

Following internal consortium discussions and more importantly engagement with the stakeholder community, a single scenario has been defined that will be used to test the communication between first responders. In addition and to be responsive to the user community needs it was decided to utilise less 3D imagery during the programme and increase the focus on developing new methods to showcase the operational benefits of information exchange / data interoperability. By reducing the 3D aspects it is not anticipated to effect the overall quality or efficiency of the programme and indeed the focus on logging the information required / requested during a crisis situation is specifically at the request of the end-users.

This document includes a description of the scenario, the functionalities, and a few screen shots of the program. It also includes some installation directives at the end of the document, as whilst the programme can be operated by a standard computer the actual program must be installed on a server.

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Abstract (for dissemination)	This document provides details on the virtual training program designed for the DISASTER project.
Keywords	Training, simulation, first responders, communication, DISASTER model.

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20/12/2013	1	Dave Fortune	Abstract, executive summary, introduction.
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Abbreviations

AMK: akut medicinsk koordination center (emergency medical coordination center)

BOR: Brand og redning (fire and rescue)

IC: Incident Commander

JCCR: Joint Centre for Coordination and Rescue

OC: Operation Control

SOK: Naval Command

TWR: Air Traffic Control Tower.

1 Introduction

This document is a short description of what the first version of the training/simulation program can do. The content and style of content in this version has been tested by the developer and presented to a few first responders in order to illicit some initial feedback. However, the prototype will be fully tested by several first responders in 2014, and their feedback and professional opinions will be used to develop a further and final version at the end of the project in January 2015.

In order to work, the prototype needs a locally installed server, so, for the Commission to test it/ try it, it will have to be installed. Instructions for the installation will be provided with the final version of the prototype, but it can also be provided before if requested.

1.1 The Concept

The training/simulation program has been design in order to give the opportunity to first responders, to train their competencies, more precisely, there communication and emergency handling competencies. Communication and information / data sharing in major cross border incidents are complex and challenging and first responders can never be trained enough on this, as this is crucial to response during a disaster. If first responders are well trained, they will be more likely to respond effectively and rapidly. This also means that they will be more likely to save lives. As saving lives is one of the most significant purpose for first responders, we know that this training program will be relevant to societies within the EU.

The second important element to mention is the link between the program and this project. The training programme can operate with or without the DISASTER module in operation. By allowing this option it will clearly demonstrate to those undertaking the exercise via the programme that there are significant operational benefits by increasing data / information / communication across stakeholders. Most significantly shortening the time needed to obtain a good multi stakeholder common operational picture thereby speeding up response and thereby increasing its efficiency and effectiveness of the service offered to the citizens involved.

1.1.1 Scenario

For this training program, a plane crash scenario will be used throughout the exercise.

The scenario is a passenger plane, crashing on the bridge between Copenhagen Denmark and Malmö Sweden.

The scenario was chosen as it illustrates well the cross-border cooperation and involves many actors. It will also be applicable to other EU countries, since they all have airports, they will be able to adapt the scenario for they needs.

This scenario is not linked to the scenarios we will use to test the DISASTER data model, so it is not to be confused with.

1.1.2 Timeline and response structure

For this scenario, a timeline as been formulated, see below:

From TWR:

1. **Airplane declares emergency onboard while approaching Copenhagen**
2. **TWR alerts fire and rescue at the airport: Airplane - emergency. Sirens TWR- "submarine"**
 - Fire trucks leave the garage (BOR) and waits for instruction from IC or TWR
 - Operation Control (OC) Security at the airport gets the alarm
3. **Airplane crashes into the bridge, TWR announces plane crash**
4. **The alert goes out to other authorities outside the airport:**
 - Police Copenhagen command station (OC)
 - 112 (hospitals and standby medical teams) coordination center (AMK)

- Fire brigade in Taarnby
 - Fire brigade in Copenhagen
 - Swedish authorities (redningsyd) coordinates with fire brigades, rescue units and police
 - The bridge (øresundsbroen) (OC Sweden)
 - Joint Coordination center rescue (JCCR) for SAR helicopters
 - Naval rescue center (SOK)
5. Navia closes the airspace over Copenhagen and OC Sweden starts the alarm
- Fire Unit U-2, SK-5 and pioneer truck, rapid response, with sirens and light to GIS coordinates from OC or TWR.
 - SK-4 and emergency trolley rapid response for staging area “Øresund”.
6. Driveway and motorway are closed by Danish and Swedish authorities; ICs meet at the bridge.

This timeline represent the first thirty minutes after the event, as they are considered the most critical. However, it will be possible to carry on with the exercise, with some actions card and/or instructions from the instructor.

The response structure will look like this:

Responders/ countries	Sweden	Denmark	Airport
Incident Commanders Police	1	1	
Incident Commanders Fire	1	1	
Incident Commanders Health	1	2	1
Tower (silver/bronze)			1
SOK- Royal navy/ water rescue(silver)		1	1
JRCC air force/ Navy (Silver)	1	1	
Bridge (silver/bronze)	1		
Incident command post (silver/ bronze)	1	1	
HQ command post Fire (silver)			
HQ command post Police (silver)	1	1	1
Joint command post (Gold)		1	
Health Coordination center (silver)	1	1	
Airline			1
Navia airspace control (silver/gold)			1
Transportation rail	1	1	
Transportation road	1	1	
DEMA (silver)		1	
FSB	1		
Civil aviation authority		1	
Accident investigation board		1	

Figure 1: Response structure

1.1.3 Roles

Gold (strategic) level player: This will be played by instructor

Silver (tactical) level player:

It is possible to use 10 active roles in the scenario for now, and there are 20 roles to choose from in the selected scenario.

Some examples are:

Incident Commander Police, Incident Commander Fire Brigade, Health officials, Security Operation Center, Naviar, Tower, Bridge Operation Control, Fire brigade Command Center, Local Coordination Center, Municipal services, etc.



Figure 2: Example of Characters for the simulation

Each player will have its own screen with the option to use the regular means of communication available for the unit. This means that, if in real life, a person has only access to radio, then, this is what will be available. As for the maps, the concept will be the same; the unit is only able to see its own maps and units.

Bronze (Operational) level player:

These units are handled by the instructor and he/she is answering all communication.

Instructor: this person will be able to see and use all ways of communications and to control the development of the scenario by guiding the different players along the predefined playbook or timeline.

The instructor will be able to see the timeline for all participants in the scenario, and scroll back in the timeline to check how the communication went.

The instructor will be able to breakdown the communication channels during the exercises, so that the decision makers become under pressure to perform without some of there communication equipment.

When the exercises is completed, the instructor can evaluate the performance for the communication doing the incident handling, by going through the log book and the voice recordings; and give feedback or locate problems in the communication between units or bottleneck that has slowed down the incident response.

1.1.4 Communication tools

It will be possible to use, radio, mobile phones, fixed phones, emails, short text messages, maps and log books.



Figure 3: Communication tools: map, log book, radio, landline phone and mobile phone.



Figure 4: The mobile phone is ringing; the player must decide to pick up or to reject the call.

1.1.5 Log Functionality

It will be possible to log the action in a log book, so it can be read by the instructor and used for debriefing at the end of the exercise.

You can see an example below:

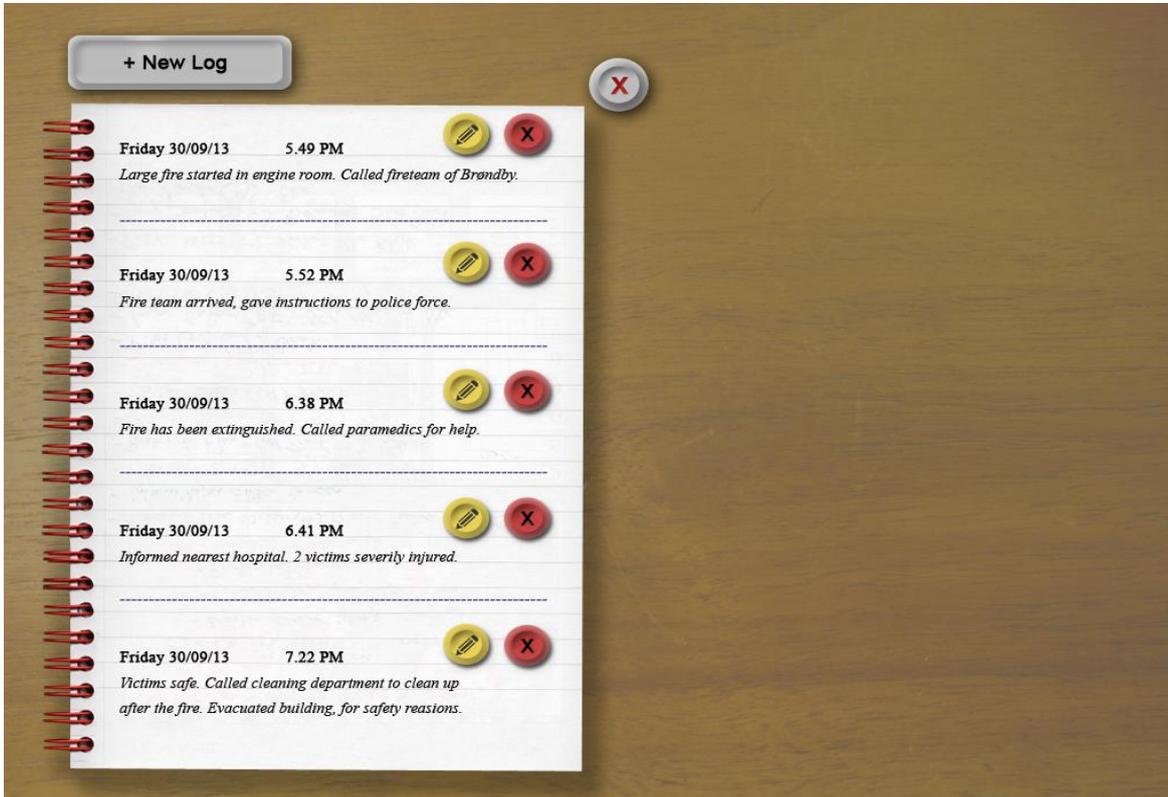


Figure 5: The log book

1.2 DISASTER On/Off

A special functionality in this program, which also links the project to the training program more clearly, is the possibility to apply the DISASTER data model on the simulation program. This is to say that the players will be able to train with the DISASTER data model, and see what the benefits are. This will be particularly useful for cross border training. When training with the data model, players should be able to react faster and more effectively, as the data model will facilitate the exchange of data between the systems. They should then be able to observe that without the data model; the communication takes more time and less efficient.

1.3 The IT Structure

The main core of the IT structure is build up to support the game play of the chosen scenario, the figure of the core and the game play structure. The core is able to handle communication in the virtual communication network via phone, email, text, mobile phone and radio, between the units or the incident handlers chosen to take part in the exercise.

The core is working just like the crisis communications system of the different EU countries. But the communications tools have to be defined by each country/role, participating in the exercise.

The core is able to support any given scenario. That means that if any emergency service would like to add scenarios to this core, they will be able too. Then, they will have to develop a playbook and guidelines for the chosen scenario.

Security:

Unless the national authorities choose to host the program themselves, they will be using a server hosted by Apex, the subcontractor. It's a closed environment where only authorized computers can access. Apex will then be responsible for the security of the data, but it will also be the responsibility of each unit to assure that no sensitive data is used during the exercise. As each unit/authority will train out of a scenario and actions cards that they will be able to prepare themselves, it will be easy for the instructors to assure that the security level is respected.

2 Conclusion

The first version of this prototype as already received very good support from the Danish and Swedish authorities. In 2014, we plan to run some focus groups with these authorities and we aim at getting in touch with other authorities within the EU, to present this prototype. The first version of the prototype is well developed and can be used already today. The final version of the program will have some extra features, such as: voice recording, interactive maps and symbol sharing. These features should make this program even more interesting for first responders.

Annex A Overall Structure of the Program

