Evaluation COncORDE pilot 2

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Location: Leoforos Stratou 127, Polichni 564 29, Thessaloniki, Greece.

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1. Summary of the result of the pilot

On Saturday 24th June 2017 the COncORDE pilot 2 took place in Thessaloniki, Greece. The COncORDE-system was extensively tested using two different realistic scenarios by the Consortium partners. Almost the entire system was tested in this pilot with the notable exception of the bystander function because of concern of the quality of the 4G network.

> **Final field demo with bystanders**
> In September this year a final field COncORDE-demo is going to be held in The Netherlands, especially demonstrating how the involvement of bystanders is facilitated by COncORDE. This will result in having all elements of the COncORDE-system (including the bystanders functionality) been tested once. This field demo will be part of a large citizen resilience exercise by the Safety Region Twente.

The following elements of COncORDE were present in the pilot scenarios:

Runners / rescue workers	
Hospitals in Greece	
Ambulance bay	
Medical treatment area	
The controller who simulates PSAP	
Command post	
E-triage	

Scenario 1: 'TeamWiz' aimed at testing the the management of team and incident information in response to an explosion requiring multiple actors to participate.

Scenario (2: 'SafePatient' aimed at testing patient management in response to a bus incident against the background of full hospitals due to another major incident.

As can be expected a series of larger and smaller points have been identified that can optimize COncORDE. Some of these points will have to be addressed after the end of the initial project.

> *Technical issues*
> - The *dispatching screen sometimes consists of low quality.*
> - *There were no real tracking (hardware) devices for patients.*
> - *The patient locations (dots) in the map aren't very accurate.*
> - *The zoom function in the map works too slow.*
> - *According to the Transport Officer the data loads slowly.*
> - *A field commander cannot un-assign a role, nor cancel a dispatch. These features should be added to the system.*
> - *It's challenging to implement all different parts (features) together in ad-hoc style.*

Overall however, it can be concluded that the COncORDE system has fulfilled its promised to facilitate both decentral decision making by sharing operational information on for example dangers directly with first responders as well as empower central command by giving it a much better information position as well as giving it a better possibility to steer by giving relevant information to all units.

2.   Introduction

On Saturday 24th June 2017 the COncORDE pilot 2 took place in Thessaloniki, Greece. The COncORDE-system was extensively tested using two different realistic scenarios by the Consortium partners.

This short observation report summarizes some findings of the observers of Crisislab that were present.

The pre-test and the two pilots will be described as well as some analysing comments.

3.   Pre-test

First, the system was tested before the actual two pilots started. The regarded both some features that were not tested before as well as some specific elements of the pilot-environment such as the use of walky-talky's.

The pre-test showed the dispatching process (EMS to incident) to work smoothly. There are however some problems with the internet connection that in one form or another will be persistent all day. The runners and the controller can't connect with Wi-Fi.

A partial solution seemed to be to ask all participants to put their phones on airplane mode. The controller chose using another hotspot because there were still some problems with the internet connecting at the triage system. After some attempts the connection is working but it's still slow. Dispatching the EMS could be completed now. Also elements such as confirming the patient list and the triage system were shown to work. Because of the slow internet connection, the patients (yellow dots) aren't visible in the map initially and beside that one patient was pictured far outside the map / pilot area. Having a bit of patience helps (and will do so all day) after a few minutes the patients (yellow dots) are visible on the map and a little later it's possible to see them moving on the map.

4.   Pilot 1: scenario TeamWiz

At 11.50 the first test incident (scenario TeamWiz, explosion) is declared and gets number 3220.

The timeline of observations is as follows:

- 11:53 a.m. | The controller is dispatching PSAP persons 1, 2 and 3.
- 11:54 a.m. | The emergency vehicle EMS1 arrived.
- 11:56 a.m. | The emergency vehicle EMS2 arrived.
- 11:56 a.m. | Login EMS1 in COncORDE.
- 11:57 a.m. | Assuming role Frontline Commander.
- 11:59 a.m. | Lost internet connection. Reconnecting.
- 12:00 a.m. | Defining hotzone.
- 12:01 a.m. | Danger on map indicated.
- 12:01 a.m. | Assign roles to other EMS (runner, transport officer, retriever).
- 12:02 a.m. | Sitreps.
- 12:03 a.m. | Asking for high command.
- 12:09 a.m. | Patients included on patient list.
- 12:10 a.m. | Runners going in the field

The following pictures show several elements of the pilot.

The Field Commander is looking in the system to search for the right info and based on that he designs the hotzone on the map. It takes a while to tag the runners with the right numbers. After the tagging process the runners are going in the field. They got the command to go back because they need to know the priorities first. The Field Commander determines the priorities.

Searching for the incident number works. After the patient list is completed by the Field Commander, the Controller creates the capacity (data) report of the hospitals.

The patient treatment area where the runners bring the patients.

A runner is tagging a patient. After the tagging systematic is completed, the runners take the patient to the treatment area.

A rescue worker at the medical point (MTA) is entering triage data and other medical data for patient examination.

A patient in the treatment area.

5.   Pilot 2: scenario SafePatient

The incident (scenario SafePatient, bus incident) is declared and gets the number 6733.

A major challenge in this scenario is that some hospitals are already full due to another incident.

The observers note that: Dispatching function works well. The Field Commander draws the hot-zone on the map and assigns the roles. He does so with an ease as if he does this every day.

Again, partly due to slowness because of internet problems EMS staff arrive at the scene of the incident without having been assigned roles. They therefore start complaining using the regular means of communication (emergency channels) to the Field Commander. Another reason for confusion is that a confirmation message is not given by COncORDE which is part of the regular protocol.

The Transport Officer has some problems with the internet connection. However, he succeeds to manage his task using COncORDE despite these internet problems.

The following pictures show several elements of the pilot.
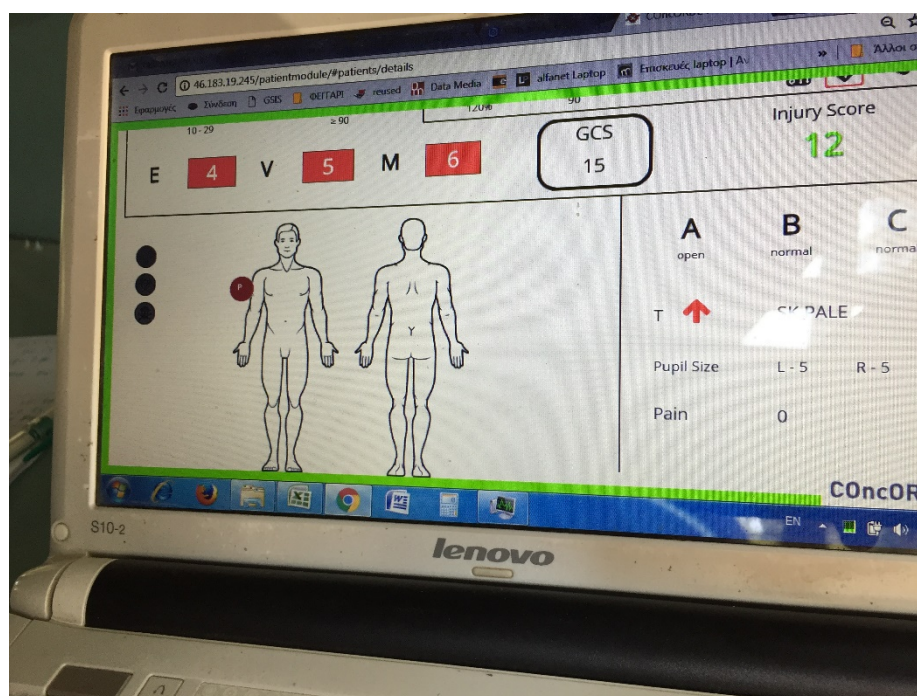
The Transport Officer is looking at the triage and injury information to properly coordinate the emergency transport. He makes sure that the most critical patients will be transported (by available vehicles) to the nearest hospitals. Searching for the nearest hospital is not possible because of a bug in the system. The hospital list is also working slowly.

TAG	Location	Current VS		Triage		Ref. DG	FR	Time to Hospital
		HR	O2	1	2			
50854037	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	95	68	2			hrtmiltiadis	
50854037	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	85	-	2			hrtmiltiadis	
61468005	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	85	99		12	Hand Injuries	hrtmiltiadis	
61468005	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	85	99		12	Hand Injuries	hrtmiltiadis	
50854037	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	95	68	2	10	Multitrauma with Traumatic Brain Injury	hrtmiltiadis	15 minutes
3032089357	Λεωφόρος Στρατού 127, 56429, Πολίχνη, Θεσσαλονίκη, GRC	90	120		12	Dehydration	psapuser1	2 hours

Showing 1 to 6 of 6 entries

Screen from the Transport Officer. He determines the priorities for the patient transport to the nearest hospitals. This function makes it for the Transport Officer possible to get a useful and quick overview of the most critical patients. For the patient search system, there a few improvements possible. When the Transport Officer search for the nearest hospitals there is no result. Also there is a bug in the tag codes because different patients got the same tag. This is the consequence of a delay in the system of the runners. The runners had no acknowledgement whether the tagging systematic was working. They always had to move on to another patient in need.

6.   Systematic feedback from emergency personnel involved in the pilot

After the pilot a systematic hot wash-up was performed in which all rescue workers that participated were asked to give their opinion about the COncORDE-system. We categorize their finding as follows:

What worked well?

- Triage systematic (fast possible) / prioritizing patients;
- The messages were very clear;
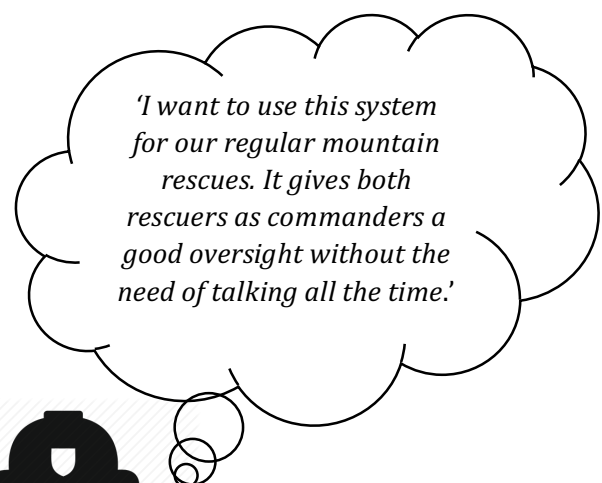- It was clear for everyone who the Field Commander was.

What can be done better?

- Sending data was very slow (especially for the runners);
- The medical staff couldn't see the map;
- The system didn't notify the persons in the area;
- The Field Commander cannot unassign his commands. A standby function is needed;
- The Field Commander must follow a few (standard) steps. These steps should be built in the system in a chronological way;
- The addition of a 'I saw you' button for the Field Commander is useful.

Tips

- More practice is necessary;
- Hardware devices to locate and monitor patients are needed.

After the pilot a rescue worker and the field commander who were involved said the following beautiful words about COncORDE:

'It's the best tool in the right hands!'

'I want to use this system for our regular mountain rescues. It gives both rescuers as commanders a good oversight without the need of talking all the time.'

7.   A short first attempt to analyse the findings

The theoretical strength of COncORDE really showed during the pilots: when EMS personnel is given the right information they will behave in a 'good' way. COncORDE gives information about the location of the incident, roles to be taken up by arriving units, dangers and victims. EMS personnel will use this information that they can access at any time (provided the internet connection works). This part of the system functioned so well that the HRT-personnel that participated immediately came up with other possible uses of COncORDE for non-medical rescue tasks like mountain rescue of rescuing of refugees at sea.

The one important feature of COncORDE that is not tested' while crucial, is the bystander function. According to the international crisis management literature it is has to be assumed that citizens are helping victims directly after an incident, like we saw at the Poldercrash in 2009, in such a way that a lot or even most of the wounded victims will be relocated after an incident.[1] Without the bystander functionality it might prove that the COncORDE system is less usable. The good news being that during the COncORDE-pilot 2 the tested functionality 'runners' looks a lot like we would expect for the bystanders role.

> **Involving citizens**
> Citizens are self-reliant during incidents and disasters.[2] The main conclusions of all self-reliance research are as follows[3]:
> - the attitude of emergency services and government towards citizens needs to change (consider their help as valuable);
> - assume that the majority of citizens is self-reliant;
> - new methods are needed to involve citizens in disaster management;
> - let citizens help during incidents and disasters;
> - involve citizens in disaster exercises (preparedness).

Rapid imaging of the (size of an) incident and fast information sharing between crisis partners is essential for successful crisis management.[4] Other research also emphasizes that network teams (like the COncORDE concept) are faster and more accurate as hierarchical teams regarding to information sharing during emergencies.[5]

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[1] Scholtens & Groenendaal, 2011.
[2] Helsloot & Ruitenberg, 2004.
[3] Lepelaar, 2008.
[4] Gryszkiewicz, 2010.
[5] Schraagen, In 't Veld, De Koning, 2010.

Another observation is that EMS personnel like runners in the pilot were waiting for commands (for a 'go') from the Field Commander before going to the incident area. This is in real life very unlikely. In case of (major) incidents rescue workers act immediately (helping victims) when they arrive at the incident area. As we know from all research on 'Natural Decision Making' EMS personnel will do in crisis situations as they do in their daily practice, so they will start to aid victims. In the pilot there were two main reasons why orders were perceptive to be given late:

- the slowness of internet as mentioned several times
- the fact that the EMS personnel was already at the location of the pilot. In real life all but the first few ambulances will take much more time to arrive so they can be assigned roles more easily before arriving.