The Road From
Emergency Management Systems
To A
Platform Gathering User Needs

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COncORDE - a Patient Centred Approach

User Requirements in the 5 Phases
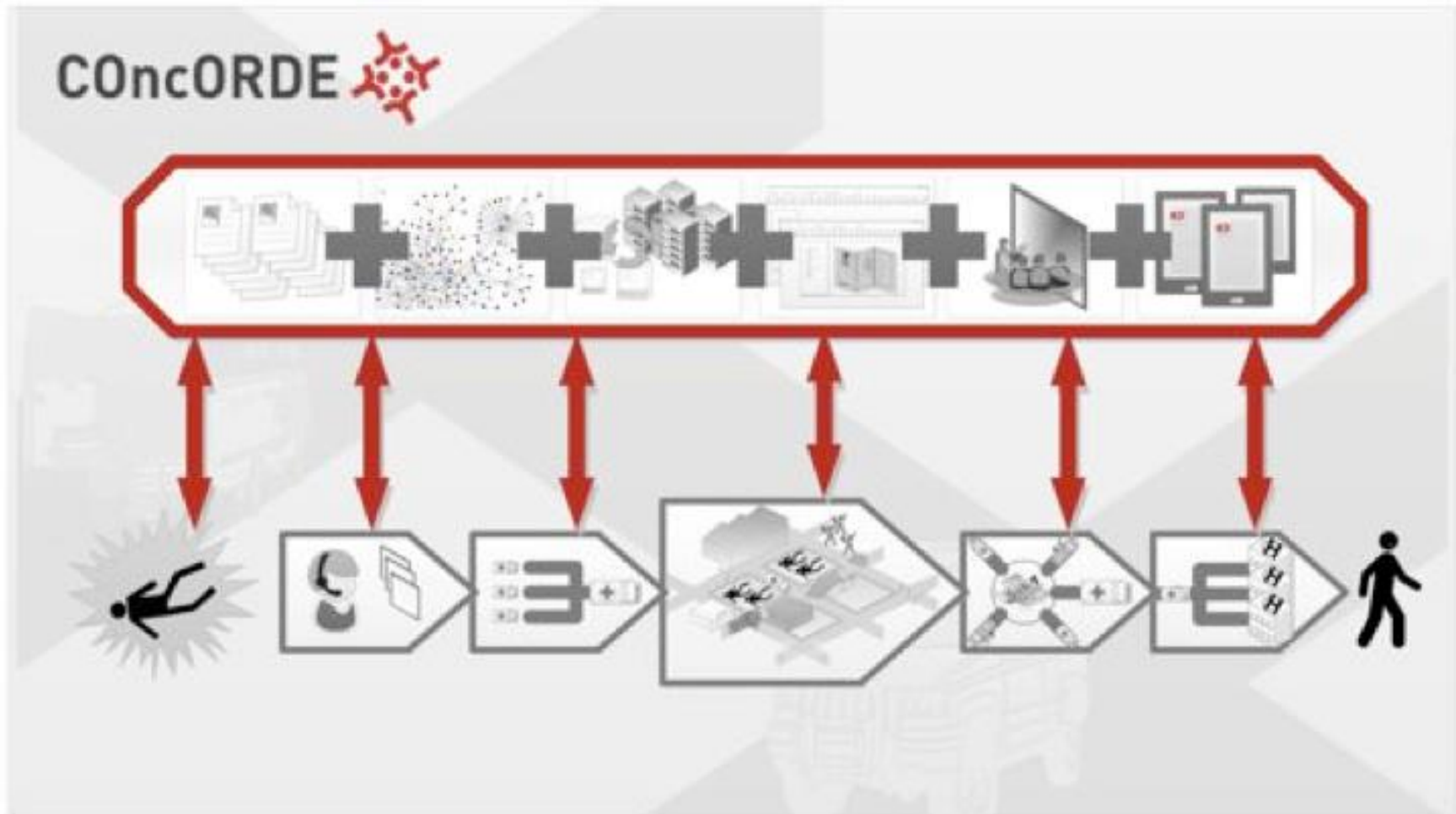
Space 1 - Alert/ Activation in PSAP/112

A.1 Identify Caller Location

PSAP wants to have automatic caller location during the call in order to get responders there faster

A.2 Initial Judgement of the Situation

PSAP wants to visualise(via photo, video) the scene in order to decide on initial resource

PSAP gets a non-verbal call (disabled, collapsed in distress unable to communicate, foreign language) and wants to obtain some sort of info (visual) about the problem in order to decide on resource

A.3 Decision and Order of Initial Resource Deployment

DSS point - PSAP wants a tool to help decide on correct resource, based on the first information received

PSAP wants to know location of available resource in order to determine the best selection.

A.4 Info to Ambulance/Resource on How to Reach Location

PSAP wants automatic transmission of the information gathered to the selected ambulance in order to save time and ensure all information is passed on

A.5 Documentation

PSAP wants   the selected ambulance to receive the incident documentation in the same mode PSAP has it available (e.g. text, map, photos - whatever PSAP has)

B.1 Ongoing Contact Until Incident Cleared

PSAP wants to keep communication with dispatched ambulance throughout the response

PSAP wants to keep communication with caller until response team arrives

B.2 Decision to Upscale

DSS point - PSAP wants a tool to help decide that upscale is required and to direct case to the appropriate higher centre

B.3 Dealing with Multiple Calls for Large Scale Emergency

PSAP wants to identify calls related to the same incident in order to assign them to the same person in charge.

B.4 Bystander Involvement

PSAP wants to receive information about the scene from any bystanders - location, visuals..

PSAP wants to locate nearby bystanders (registered as volunteers on the COncORDE systems) to inform them about an incident in their vicinity and request a certain action - e.g. CPR, providing visuals...

Victim wants to be able to send a "help and find me signal" to bystanders without having to make a phone call.

B.5 Cross-Border Call

PSAP wants to direct a call to another PSAP with which they are not normally linked (e.g. two countries, or two federal states).

B.6 Event recording , QA and Training

PSAP wants to have a full log of a call, i.e. information received and response in order to audit, evaluate and train

PSAP wants to link event recorded data of own and EMS with First receiver for epidemiological surveillance (link to public health data, other responders etc..) to plan resource and prevention.

Use Case Selection and Prioritisation

Criteria for selection were

Clinical

- Likelihood to shorten Time,
- Likelihood to increase Accuracy of response (i.e. taking the right patient to the right place…)

Practical

- Scope of Applicability
- Relevance to other initiatives
- Innovation Potential
- Number of other use cases that could be linked with the same tools
- Usability concerns

Technical

- Feasibility
- Availability of solutions

Further criteria: In scope/out of scope, increase of system efficiency, increase of capacity

Outcome scores: High, medium, low priority and out of scope.

The Use Case Priority List

A.1 Identify Caller Location

PSAP wants to have automatic caller location during the call in order to get responders there faster N1-0

A.3 Decision and Order of Initial Resource Deployment

PSAP wants to know location of available resource in order to determine the best selection. N1 - 1

A.4 Info to Ambulance/Resource on How to Reach Location

PSAP wants automatic transmission of the information gathered to the selected ambulance in order to save time and ensure all information is passed on N3-1

B.6 Event recording , QA and Training

PSAP wants to have a full log of a call, i.e. information received and response in order to audit, evaluate and train N5-1

C.1 Finding Caller Location

EMS wants to have automatic caller location during the call to get there faster N1- 2

EMS wants to have navigation guidance or at least some instructions in unfamiliar area or difficult to reach location to get there faster N1-3

C.2 Dealing with Limited and Uncertain Information

EMS wants to maximise types of information (text, visuals..) on incident which they can obtain while on their way in order to send to PSAP. N4-1

D.4 Event Recording , QA and Training

EMS wants to have a full log of a call, i.e. information received and response in order to audit, evaluate and train N5-2

E.1 Establish Control, Cordon, Command and Safety (CCCS)

Help-signals of victims (help-beacons) of any kind (phone, car, bracelet..) N1-4

E.3 Dynamic Situation Assessment

The EMS wants to be able to enter information from different parts of the field simultaneously with various actors (PSAP, field staff , other responders) e.g. visuals, photos, maps - to update operational picture and see updates from others. N4-2

E.4 Triage and Tagging (i.e. keeping track of patients)

EMS wants to have a means to electronically view the algorithm for triage add to N2-1

EMS wants to have a means to electronically record triage status N2 -1

EMS wants to have a means to transmit in real time triage status results (e.g. yellow, green..) N2 -2

EMS wants to be able to put an electronic tag on patient that helps locate patient from remote N1-5 N2-3

EMS wants to be able to put an electronic physiological parameter wearable device on patients to monitor vital signs and transmit signals of changes N2-4

EMS wants to have a map to see the triage status, location via tagging and vital signs of all patients across a field. N4-3

EMS wants to be able to put "connected" electronic tags on victims N1-6

During the second triage (SORT, i.e. at the advanced medical point - ambulance loading bay, before field treatment) EMS wants to be able to add to the electronic tag brief info on classification of patient needs N2-5

EMS wants that the additional classification info on patient needs via the tag, will reach automatically the Transport Organising Officer on the field N2-6

F.3 Bystander Involvement

EMS wants to be able to locate bystanders who are able to help especially in resource mismatch situations. N1-7

F.4 Event Recording , QA and Training

EMS want to have a system that records all information that is presented to their devices during field operation. This system needs to be able to process information coming in in different modes and in parallel and to be able to replay this in some sensible way for evaluation N5-3

G.1 Finding First Receiver Location

Vehicle crew wants to see location of First Receiver. N1-8

Vehicle crew wants to have navigation support to First Receiver. N1-9

G.2 Monitoring and Treatment of Patient En Route

Vehicle crew wants to use (the field) monitors en route which can transmit information of status and changes to First Receiver. N2-7

G.3 Documentation

Vehicle crew wants to have the same documentation tool and ways to present information throughout an emergency, starting from PSAP through to First Receiver. N3-2

H.2 Bystander Involvement

Registered bystanders as per F.3 who support the EMS with their own vehicle taking patient to First Receiver want to be able to use some of the technology available to normal EMS crews N1-8 and N1-9 - add bystander as user of same case

H.3 Event Recording , QA and Training

Vehicle crew wants to have a full log of all events from the moment of allocation for dispatch to the handover in order to audit, evaluate and train N5-4

J.3 Event Recording , QA and Training

First Receiver wants to have a full log of events - from the initial alert, to the Trauma call, to the handover (and beyond to definitive treatment). **N5-5**

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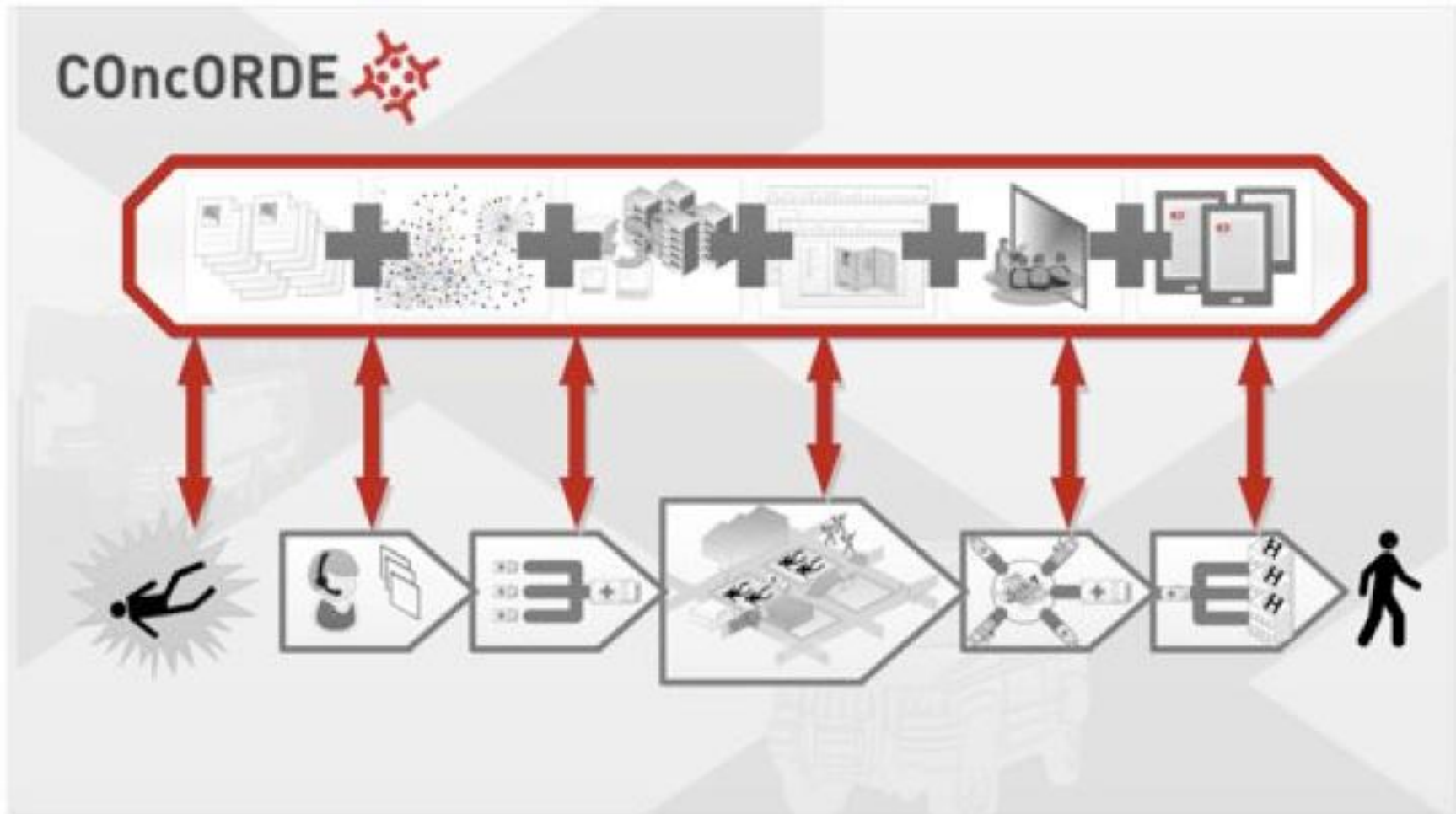
The Networks

1. The **"Network of locatable components" N1**

Locatable components can be responders, vehicles, patients, bystanders, equipment - anyone and anything within the high priority list, the location and position of which adds value in the process of the response, e.g. speeds up response or makes it more accurate by allocating the right resource to the right patients.

2. The **"Network of transmittable patient status parameters" N2**

We will test if patients can be electronically tagged at the moment of first contact and not only if patient's location and triage status but also the real-time physiological parameters and a basic list of needs (e.g. burns, head trauma) for allocation purposes could be made visible through reading the tag remotely. Alternatively, if the tag cannot be read remotely beyond geo-positioning, then at least we will explore if it could retain the information of all patient-medical contacts on the field - from the responder's device via a scanner to the tag, so that it can be read by the next responder who comes in contact with the patient (e.g. transport crew, first receiver staff).

3. The complete incident **"e-Form" N3**

We will test if all the information about the incident and anything relating to the patient from the moment of information coming in to the PSAP (alert call) , through to field management, through to management in the vehicle to first receiver, could be automatically collected in one space, using all the keyboard and screen entries that are done anyway - e.g. computer entry at PSAP, triage status, vital sign recording, basic treatment, needs categorisation etc. in order to maximise available information and accountability.

4. The **"Joint operational map" N4**

We will test, taking under consideration the rich spectrum of existing work in the field of mapping, how COncORDE should approach area and component visualisation in the most simplistic and reliable way, allowing different views to different users. More importantly, in this thread we will examine how far we can incorporate citizens' resilience into providing information towards the map and the visualisation, incl. the potential contribution from social networks.

5. **"Recording and replay"** for evaluation, training and accountability **N5**
During the selection of technology solutions preference will be given to any solutions that allow recording and replay of knowledge available at a certain time and decisions made.

Questions for Discussion

What happens on the field of an incident

How much does the commander know/see

Usefulness of tagging victims – visualise location, vital signs and a category of need (referral category)

Usefulness of tagging responders

How fast do you get a match between available beds and real needs?

Approach to automatic referral to hospitals – how does it work here

Do you have any issues with capacity creation i.e. emptying beds urgently – is it automated

Do you use prediction data of what to expect and manage the beds accordingly

Use of e-documentation from field to FR

Minimum data set

Use of social media

Use of bystanders – organised networks

How often have you come across responders who are not prepared to wait for their employer to supply them with tools and they upload various apps from the internet to help them manage better?

How often have you come across a technology that kids play with (e.g. drones) – and would add value to patient management in many cases but is not being used for you and for me if we are in trouble.

Thank You

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