COPE – COMMON OPERATIONAL PICTURE EXPLOITATION

SEVENTH FRAMEWORK PROGRAMME

GRANT AGREEMENT No 217854

Collaborative project

Deliverable No D1.3

23/12/2010


# Common Operational Picture Exploitation Dissemination Event

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| Dissemination level: | Public (PU) |

COPE

## Summary

This report provides a summary of the COPE project final dissemination event. The event was held on November 30, 2010, in conjunction with the biannual Public Safety Communication Europe Conference held in Amsterdam. Seventy six (76) people participated in the event, including the COPE presentation team (which consisted of 10 representatives). In addition to the event itself, communications about the event and access to the COPE project presentations were made available to a far wider audience through the PCSE electronic distribution list. The COPE team had several opportunities to present information about the project. On Nov 30, from 1400-1500 Jari Hamalainen and Aapo Immonen presented an overview of the COPE project. Following the overview presentations, Johan Forsling and the technical team presented for 30 minutes to the Industry Committee Meeting, while Leena Norros and Reinhard Hutter presented for 30 minutes to the Users Committee Meeting. In addition, throughout the conference, the COPE project had an exhibition booth to demonstrate the technologies developed during the project and to discuss poster presentations that had been prepared.

The feedback from the conference participants and the COPE team indicated that the dissemination event had been a success. Materials from the presentations are appended to this deliverable, including the list of attendees and the conference schedule.

## Contents

# 1 Introduction

The purpose of this deliverable is to ensure that the COPE project findings were not produced in a vacuum. That is, the findings from the COPE project should be widely available to the research, industry and end user communities. Efforts throughout the project to engage other researchers, end users, and industry have been captured in D1.2 Dissemination Route Map (Hutton, et al., 2010). The purpose of Work Package 1.3 was to organise an event at which the findings from the COPE project overall and specifically the final evaluation event held in Kuopio in September 2010, could be presented to a broad audience.

# 2 Goal

The purpose of this exercise was to communicate the various aspects of the COPE project to a broad audience and make the products of the project accessible to a broader European crisis management and public safety community.

# 3 Description

## 3.1 Public Safety Communication Europe Conference

In order to maximise the cost effectiveness of organising such an event to reach a broad audience we enlisted the help of the Public Safety Communication Europe organisation (www.psc-europe.eu).

PSCE hold a biannual meeting at various locations around Europe. They have an established network of researchers, end user organisations, and industry with whom they communicate frequently. We approached them to support our final dissemination event in August 2010, following their Vienna conference. The purpose of PSCE is:

> *"The Forum for Public Safety Communication Europe is to foster, by consensus building, excellence in the development and use of public safety communications and information management systems as well as to improve the provision of public safety services and the safety of the citizens of Europe and the rest of the world.*
>
> *The PSCE provides a common platform for researchers, industry and users to meet and network, learn about technologies used for public safety and influence policy makers at European level."*
>
> Taken from the PSCE website Forum Mission Statement

PSCE formally has about 170 people affiliated to the organisation (institutional or individual members). In addition, they have a list of contacts that were previously registered to the PSCE Forum when the Forum was not yet an autonomous organisation but the deliverable of an EU funded project. That list contains around 600 contacts who receive regular information on PSCE activities and news. Therefore, by disseminating the invitation to the COPE event and the COPE flyer to PSCE's network, our project was exposed to over 760 people.

We provided PCSE with a list of presenters and arranged the schedule so that the COPE project could be presented from several perspectives, including the technologies that were developed, the human factors-driven user-centred design approach, and the overall evaluation approach taken for the final evaluation held in Kuopio in September 2010.

In addition, we forwarded the PSCE conference invitation to our own end user, researcher and industry networks in order to provide feedback about the project to the many people with whom we have worked over the duration of the project, and to provide them with an opportunity to see the results of their inputs.

## 3.2 Conference Dissemination Materials

Materials from the final event can be found in the Appendices. These include:

1) The COPE flyer which was disseminated during the final evaluation and the dissemination event. This two page document provides an overview of the COPE project, the system components, development approach, and description of the partner organisations.
2) The PSCE Conference Amsterdam Programme. This document provides a list of the conference speakers and topics which broadly covered the areas of critical information protection and public warning policy. In addition there were three sub-committee meetings for industry, end users, and researchers respectively.
3) The presentation materials for the event:
    a. General Presentation – Jari Hamalainen
    b. General Presentation – Aapo Immonen
    c. Industrial Committee – Johan Forsling
    d. Users Committee – Leena Norros
    e. Users Committee – Reinhard Hutter
4) The PSCE Attendance List. 70 people participated in the conference, from over 15 different countries in the EC, and a representative from Saudi Arabia. Participants represented industry, end user communities and researchers in both industry and academia.
5) A PSCE Press Release describing the success of the Amsterdam conference from the PSCE perspective.

# 4 Conclusions

The feedback from the event organiser, Marie-Christine Bonnamour, and from the COPE team presenters and participants, was that the event was a success, with a broad audience of attendees and invitees becoming familiar with the work accomplished during the COPE project.

# References

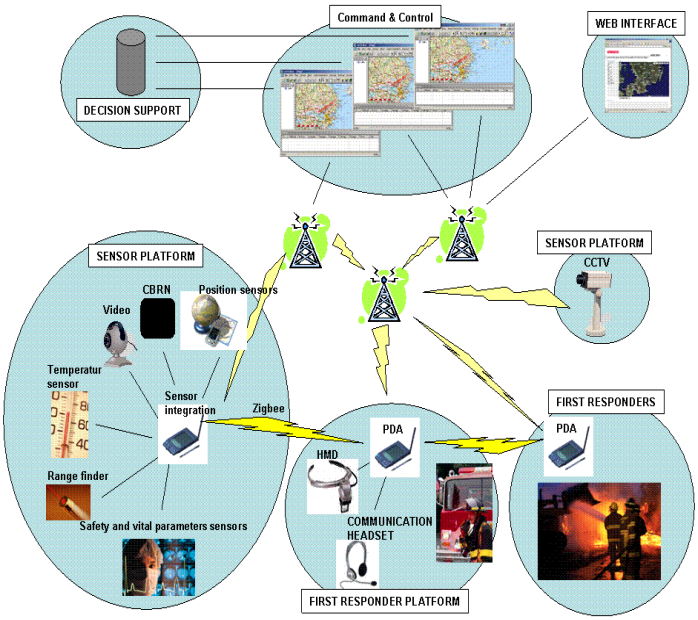
Hutton, R., Wilkins, M., Savioja, P., Forsling, J., Petcu, V., Immonen, A., Cooke, M., Schmitz, W., & Sampaio, D. (2010). Dissemination Route Map. COPE Project Deliverable 1.2. Finland, VTT.

# Seventh EU Framework Programme, Theme 10: SECURITY

## The **COPE** Project: **C**ommon **O**perational **P**icture **E**xploitation

The objective of the COPE project is to create technological solutions which enable improved emergency management by better command and control performance, reliability of technical support at reduced overall costs. The aim is to create technological solutions that increase situational awareness among agencies and enhance both horizontal and vertical information flow to and from first responders.

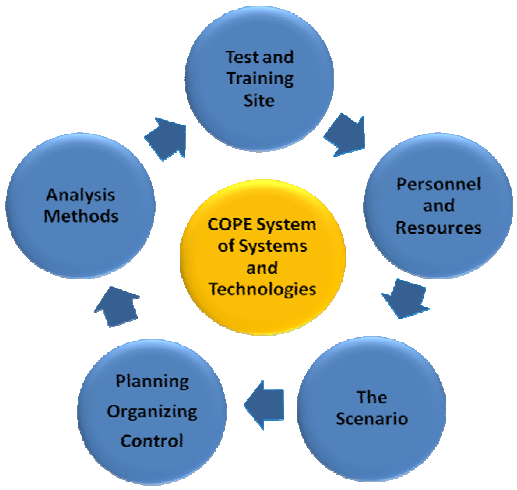
The project started in February 2008 and ends in February 2011. It is performed by a consortium of 9 partners from industry, research and consultancy. (Please find team details on the back page). The project developed a novel system of systems for improved situation awareness and decision making in disaster management.




The COPE system comprises interconnected technologies to be worn by first responders, like head-up display, wrist mounted display, thermal and video camera, and a set of chemical, meteorological and geo-reference sensors. Command and Control (C2) functions are supported with ruggedized PCs in the field and the COPE-C2 with advanced software solutions for tasking, situation drawing and map and graphical representation of the Common Operational Picture. C2 is further supported by a decision support system for risk assessment and estimation of hazardous materials. The innovation of COPE lies in the enhancement of legacy components, the development of new software components, and above all, in the integration of many heterogeneous components into one system, based on modern radio systems and WLAN internet access.

The COPE system and its technologies have been tested and their functionalities verified in a series of laboratory and field experiments. In a final trial on the Emergency Training Centre in Kuopio, Finland, the whole system is exposed to a real „live“ scenario, consisting of the explosion of a chemical factory, the subsequent fire in an adjacent brewery followed by the explosion of an ammonium tank setting free a toxic cloud. Primary effects in the area are roads blocked by debris and destroyed cars, fatalities and numerous injuries of different grades. The exercise demonstrates how the quality of emergency management improves by the use of the COPE system and its applications. Further functionalities: the coordination between different organizations like Fire fighters, police and ambulance and medical services and the additional complexity of the Common Operational Picture are supported by a simulated so called tabletop exercise.

Typical emergency management tasks will be the clearing of roads, the rescue of injured, the alerting and evacuation of the population, and the containment and extinction of the hazards. These all coordinated and supported by the COPE technologies. The exercise is monitored and supervised with the aim of a thorough evaluation of the COPE effort and its results. An in-depth analysis of the human factors involved will be based on intensive user feedback resulting in evaluating the acceptance and applicability of COPE devices by the end-users, and it will show how these devices will contribute to the improvement of the First Responders' actions and to the reduction of their risks. An overall evaluation will assess the improvement of C2 functions, and the overall success of the project and of the trial. It will also give an indication of the innovative character of the project and recommend further developments for a successful marketing of the COPE products and of the knowledge gained.




## VTT, Technical Research Centre of Finland, Finland

VTT is an impartial multidisciplinary research organisation. VTT's technological focus areas are applied materials, bio and chemistry processes, information and communication technologies, industrial systems management, microtechnologies and electronics, and technology in the community.
**www.vtt.fi**
**human-technology interaction at VTT**

## BAE Systems, United Kingdom

BAE Systems is an international company engaged in the development, delivery and support of advanced defence and aerospace systems. Two areas of BAE Systems are involved in COPE project: the Advanced Technology Centre (ATC) and Defence Avionics Systems (DAS).
**www.baesystems.com**

## BAE Systems C-ITS, Sweden

The offerings of Swedish BAE Systems, referred to as BAE Systems C-ITS ranges from complex systems integration to complete turnkey solutions including design installation, operation, training, maintenance, and support.
**BAE Systems C-ITS**

## TCD, The University of Dublin, Trinity College, Ireland

The Aerospace Psychology research Group (APRG) of University of Ireland, Trinity college participates in COPE project. APRG hosts active collaboration between academic researchers and aviation practitioners in order to foster and develop research and good practice in relation to the human aspects of the aviation system.
**www.tcd.ie**
**www.tcd.ie/Psychology/aprg**

## UTI Group, Romania

The Security and Defence Systems division of UTI Group has R&D activities related to advanced technology management in the fields ranging from security management to integrated building management. The core of the R&D activity is the Network Centric Management and Control Concept.
**www.uti.ro**

## GMV, Portugal

GMV-Skysoft Portugal is a small size company with a long-standing experience of providing critical systems and software technology for the aeronautics and space industry, especially in the navigation field. GMV is also a well known ESA supplier.
**http://www.gmv.com.pt/**

## CESS, Centre for European Security Strategies, Germany

CESS is an SME with a core team of security experts and a network of consultants. It provides contributions to a wide range of security and risk related problem areas. The Centre has been created with the objective to provide strategic, operational and technical security, and risk management expertise.
**www.cess-net.eu**

## IGSU, General Inspectorate for Emergency Situations, Romania

General Inspectorate for Emergency Situations (GIES) is a department of Ministry of Interior and Administrative Reform. GIES is part of the national emergency management system which sets up, organises, and directs the prevention and management of the emergency situations, the assurance and coordination of human, material and financial resources.
**www.igsu.ro**

## ESC, Emergency Services College, Finland

ESC provides training in rescue services including emergency response centre dispatchers. The ESC R&D Unit is in charge of the coordination of the research activities within the Rescue Services in Finland. Its expertise areas are telecommunications within emergency services, hazmat, and dealing with trans-boundary incidents.
**www.pelastusopisto.fi**

Your Point of Contact, the project manager Jari HÄMÄLÄINEN from VTT: Jari.Hamalainen@vtt.fi

# PSC Europe Forum Conference

# 30 November & 1 December 2010

# Amsterdam, the Netherlands

**Venue : Cisco, Haarlerbergpark, Haarlerbergweg 13-19, 1101 CH Amsterdam, Netherlands, Tel: 0800 0200 791, Fax: +31 (0)20 357 1100**

**Practical details on page 15**

# Meeting Focus

**The focus of the meeting is two-fold**

- Critical Information Protection
- Public Warning Policy

# MEETING PROGRAMME

## 30 November 2010

- 08.30 – 09.00 – Registration Opens
- 09.00 – 09.10 – Opening
- 09.10 – 09.40
  Presentation of the Dutch Civil Protection and Communication Solutions - Dick SCHOOF, Director General Public Safety, Ministry of Interior, The Netherlands
- 09.40 – 10.10 – Civil under normal circumstances - Government under crisis circumstances - George PETERSEN, Radio Communications Agency, Ministry of Economic Affairs, Agriculture and Innovation, The Netherlands
- 10.10 – 10.40
  - Presentation of a topic by the Research Committee - Snjezana KNEZIC, University of Split, Croatia
  - Trends in Research for Public Safety Communications - Helmut SCHWABACH, Austrian Institute of Technology (AIT)
- *10.40 – 11.10 - Coffee Break*

➢ **CRITICAL INFORMATION PROTECTION (11.10-12.40)**

- 11.10 – 11.40
  Critical Information Infrastructure Protection and its Consequence for Public Safety Communication: the EU perspective – Joern-Uwe HEYDER, European Commission, DG INFSO
- 11.40 – 12.10
  National case study: Luxembourg - Carlo SIMON, Government Communication Centre, Luxembourg
- 12.10 – 12.40
  Cyber Security: Challenges & Solutions - Paul KING, Senior Security Advisor, CISCO
- *12.40 – 14.00 - Networking Lunch*
- 14.00 – 15.00
  Presentation of the COPE project - Jari HAMALAINEN, VTT, Finland and Hannu RANTANEN, Emergency Services College, Finland
- *15.00 – 15.20 - Coffee Break*
- 15.20 – 17.30
  PSCE Committee Meetings *Industry, User, Research*
- *19.30 – 22.30 –*
  *Dinner at De Kroon Restaurant offered by CISCO Systems*

## 1 December 2010

- 08.30 – 09.00 – Registration Opens
- 09.00 – 10.30 – General Assembly
  Report from the President & the Secretary General
  Report from the Treasurer: information on 2010 Budget, vote for 2011 Budget
  - Report from the Advisory Board and from working groups:
  - Overview and Conclusions of the Consultation Paper "Enterprise Architecture as the foundation for agile Public Safety & Security" - OSSAF authoring team
  - Spectrum Harmonisation Initiative – Steffen RING, Motorola
- *10.30 – 11.00 - Coffee Break*
- 11.00 – 11.30 – German initiative on user requirements and their spectrum consequences – Wolfgang NOWACK, Federal Agency for Digital Radio of Security Authorities and Organizations (BDBOS)
- 11.30 – 12.00 – The Belgian experience: the consultative committee of users Claude JACQUARD, Director of the Police Emergency Centre Province Hainaut, Belgium
- 12.00 – 12.30 – Hybrid cognitive radio networks for command & control in public safety - Frank BROUWER, Institute for Wireless and Mobile Communications (WMC), The Netherlands
- *12.30 – 13.30 - Networking Lunch*

➢ **PUBLIC WARNING POLICY (13.30-16.30)**

- 13.30 – 14.00 – Implementation of Cell Broadcast in the Netherlands : lessons learnt - Willy STEENBAKKERS, Ministry of Interior
- 14.00 – 14.30 – International development of Cell broadcast - Bruno WALTER, CellCast Technologies, Austria
- 14.30 – 15.00 – Presentation of IDAC (Integrated Alert Distribution Center) IADC in frame of the Israeli Home Front Command Warning Concept- Guy WEISS, eVigilo & Lt. Col. Levi YITAKH, The Israeli Home Front Command
- 15.00 – 15.30 – Using nP2M: Realistic Approach for Alerting of Population in Europe - Dietmar GOLLNICK, e*Message
- 15.30 – 16.00 – Potential of Crowd Sourcing in Situational Awareness Improvement during Emergency Situations - Bram van den Ende , TNO, The Netherlands
- 16.00 – 16.30 – Alert For All Project: a European wide approach for alerting the population in crisis - Cristina PARRAGA, DLR, Germany
- 16.30 – Closing of the meeting

# Industry Committee Meeting Agenda

**15.20 – 17.30**

1. **COPE project presentation -**
   **Improving information flow to/from first responders and incident command, Johan FORSLING, BAE Systems C-ITS, Sweden**
2. **OSSAF proposal review and discussion -**
3. **Spectrum activity update-**
4. **Discussions / Other topics -**

# Research Committee Meeting Agenda

**15.20 – 17.30**

1. **Research to support science-based policy making, opportunities and limits in the context of PSCE.**
2. **How to make the best use of the PSCE "social network" to promote our research topics and to participate to EU calls**
3. **Renewal of the research Committee call for candidates**
4. **Any Other Business**

# Users Committee Meeting Agenda

**15.20 – 17.30**

1. **Update on PSCE business as seen from the users side**
2. **COPE User Centered Design and Evaluation, Leena NORROS, VTT, Finland and Reinhard HUTTER, CESS GmbH Centre for European Security Strategies**
3. **Ian Readhead, ACPO/ BAPCO: What are the implications of the financial cutbacks on the development work within public safety, as seen from a users perspective?**
4. **Mats Persson, Swedish police: Users experiences on implementing a digital radio system in a border area**
5. **Any other business**


# Dissemination event on Common Operational Picture Exploitation (COPE) Project

- The objective of the COPE project, funded by the Seventh EU Framework Programme, is to create technological solutions which enable improved emergency management by better command and control performance, reliability of technical support at reduced overall costs. The aim is to create technological solutions that increase situational awareness among agencies and enhance both horizontal and vertical information flow to and from first responders.

- The project started in February 2008 and ends in February 2011. It is performed by a consortium of 9 partners from industry, research and consultancy. The project developed a novel system of systems for improved situation awareness and decision making in disaster management.

- More information is available at http://cope.vtt.fi/

# Programme of the dissemination event on Common Operational Picture Exploitation (COPE) Project

30 November 2010

- 14.00 – 15.00
  COPE Overview- Jari HAMALAINEN, VTT, Finland and Hannu RANTANEN, Emergency Services College, Finland

- Industrials Committee (30 min)
  COPE Technology - Improving information flow to/from first responders and incident command, Johan FORSLING, BAE Systems C-ITS, Sweden

- Users Committee (30 min)
  COPE User Centered Design and Evaluation, Leena NORROS, VTT, Finland and Reinhard HUTTER, CESS GmbH Centre for European Security Strategies

- Booth presenting the COPE technology developments will be available

# PSC Europe Forum Conference
# Sponsors & Exhibitors

## Sponsors

CISCO

EADS

## Exhibitors

WMC
Twente Institute for Wireless and Mobile Communications

e*message

CISCO

# Presentation of the sponsors

**CISCO** celebrates this year 25 years of technology innovation, operational excellence and corporate social responsibility.

The concept of solutions has been with Cisco since its inception. Husband and wife Len Bosack and Sandy Lerner, both working for Stanford University, wanted to email each other from their respective offices located in different buildings but were unable to due to technological shortcomings. A technology had to be invented to deal with disparate local area protocols; and as a result - the multi-protocol router was born.

Since then Cisco has shaped the future of the Internet and has become the worldwide leader in networking - transforming how people connect, communicate and collaborate.

As market transitions evolve so do our product offerings - all to best meet customer needs. Over time, Cisco has evolved from Enterprise, Public Sector and Service Provider solutions to addressing customer needs in many other segments including Public Safety & Security.

Cisco's vision is to transform the way Cisco and our customers provide global safety and security solutions for employees, citizens, critical infrastructure and public safeguards. Using the network as the platform, Cisco is collaborating with government, ecosystem partners and private institutions to solve some of the toughest societal and business challenges in today‘s world. Together, we can increase the effectiveness of local and regional police, fire, medical and government professionals by providing tools to coordinate rapid, appropriate responses to all type of emergencies.

Cisco is committed to innovation and research and development is a core component of our corporate culture. Cisco spends nearly $5.2 billion a year in R&D, making us one of the top R&D spenders in the world.

More information is available at: www.cisco.com

# Presentation of the sponsors

**EADS – For the security of all**

**EADS** delivers complete mission critical solutions, and the EADS TETRA and TETRAPOL systems are an excellent solution for customers who want to set up a shared radio network with complete coverage and security.

Our portfolio also includes control rooms and applications. Users prefer our easy to use radio terminals and their innovative features.

Fortecor® will be the ultimate high-speed solution, complete with new applications that take advantage of high-speed data. Evercor® expertise is at your service worldwide. Together with our customers, we build the future of PMR.

More information is available at: www.eads.com/pmr

# Presentation of the sponsors

**Motorola**

We are a global communications leader powered by a passion to invent and an unceasing commitment to advance the way the world connects.

Our communication solutions allow people, businesses and governments to be more connected and more mobile.

For more information about our company, our people and our innovations, please visit http: www.motorola.com

# Presentation of the exhibitors

Twente Institute for Wireless and Mobile Communications

**WMC** is short for Twente Institute for Wireless and Mobile Communications. WMC is an innovative high-tech organization focused on radio communication for mission critical applications. We offer our expertise through contract research and consultancy projects, as well as our own product line FIGO.

Our experience covers most contemporary wireless and mobile communication technologies, including GPRS/UMTS/HSPA/LTE, TETRA, WiFi, BlueTooth, Zigbee, DECT and many others.

WMC started as a spin-off of Ericsson in 2002. Our team embodies expertise that goes back into the eighties. Through our continuous and intense participation in many national and international research projects we constantly keep up to speed with the forefront of radio technology.

We translate new trends in radio technology into practical solutions, focusing on mission critical communications. In this focus area we offer our product line FIGO. It is a hybrid radio network for reliable data communications. Nodes in the field connect with the infrastructure using redundant radio links, always selecting the best available option. In addition nodes that are in each others proximity create and maintain an ad-hoc (mesh) network in the field. This supports local communication as well as multi-hop communication with the infrastructure.

WMC offers a unique combination of research, consultancy and system / product development. WMC is a partner that doesn't only create a design, but also translates it into practical solutions and if you suitable we also develop it. Theoretical knowledge of the mobile domain and the ability to translate it into practical solutions go hand in hand for WMC.

More information is available at: www.ti-wmc.nl

# Presentation of the exhibitors

**e*Message Wireless Information Services Group Europe**

- Leader in continental European nP2M operations.
- In Germany and France: operates nationwide networks with excellent coverage that deliver the highest reliability.
- Countrywide offering of full range of Alerting, Business Paging and Data Broadcast services, as well as a Berlin-Brandenburg professional trunked radio network for voice and data (PAMR: Public Access Mobile Radio) made available to industry companies, public agencies, among them PPDR, and service providers.
- PPDR users and cooperation partners (among others): Fire Services of counties, regional departments, cities; Federal Police, Federal Body for Disaster Prevention and Disaster Relief.
- Provider of narrow band Point-to-Multipoint (nP2M) technology including satellite based backbone to serve various end user devices such as two million personnel weather forecast stations, personnel alerting devices, embedded warn modules, traditional pagers, displays etc.
- Contribution in national and European research projects related to alarming and alerting of population.
- More information is available at: www.emessage.eu

# PRACTICAL DETAILS

- PSCE Conference will be held at **CISCO Systems**

  Haarlerbergweg 13- 19 / 1101 CH Amsterdam Zuidoost, Nederland

  Tel: 0800 0200 791, Fax: +31 (0)20 357 1100

- Conference participants will mainly stay at the following 2 hotels :

**INNTEL HOTEL**

Nieuwezijds Kolk 19 - 1012 PV Amsterdam (Netherlands)
Tel: +31 (0)20 530 1818 | Fax: +31 (0)20 - 422 1919
svdbrink@inntelhotels.nl
Contact person: Susanne van den Brink

**RHO HOTEL**

NES 05-23 - 1012 KC AMSTERDAM (Netherlands)
Tel: + 31 20 6207371 | Fax: + 31 20 6207826
info@rhohotel.com
Contact person: Enny DIK

- **BUS PICK-UP offered by the Dutch Ministry of Security & Justice**

  - **30 November 8.00 am & 6.00pm**
    From/to RHO Hotel & INNTEL Hotel to CISCO premises;
  - **1 December 2010, 8.00 am (only!!)**
    From RHO Hotel & INNTEL Hotel to CISCO premises

**!!! - INNTEL hotel is located in a pedestrian street therefore the bus shall pick up and drop the guests at Crown Plaza city Centre Hotel, Nieuwezijds Voorburgwal 5, which is about 250 metres from INNTEL Hotel.**

- **Dinner offered by CISCO Systems** (within walking distance from both hotels)

  30 November, 7.30pm - ***De Kroon Restaurant***, Rembrandtplein 17-I / 1017 CT Amsterdam
  Tel: 020-6252011 / Fax: 020-4276833 http://www.dekroon.nl/


# COPE - Common Operational Picture Exploitation

**Dr. Jari Hämäläinen, VTT**
**Coordinator of the COPE project**

COPE is a FP7 Security Research project

SEVENTH FRAMEWORK PROGRAMME

VTT Technical Research Centre of Finland
BAE Systems (United Kingdom)
BAE Systems C-ITS (Sweden)
TCD, Trinity College Dublin (Ireland)
UTI Group (Romania)
GMV-Skysoft (Portugal)
CESS, Centre for European Security Strategies (Germany)
IGSU, General Inspectorate for Emergency Situations (Romania)
ESC, Emergency Services College (Finland)
http://cope.vtt.fi

# Objective of COPE Project

- The overall objective was to improve emergency management by **better command and control performance.**
- The aim was to create technological solutions that **increase situational awareness** among the stakeholders involved and enhance both horizontal and vertical **information flow** to and from a first responder.
- Various **human factors** methods ranging from functional task modelling to end user simulations were applied in **an usage-centred technology development** process.
- The project started in February 2008 and ends in January 2011.

# COPE – Objectives for the 1st, 2nd and 3rd Periods

- The objectives for **the 1st period** included one milestone “M1 Use case descriptions (D2.1)” . Generally the objective was **a thorough understanding of the first responder work** and the issues essential for COP, and **a review of the appropriate technologies**.

- The objectives for **the 2nd period** included two milestones “M2 Human Operator Support requirements (D3.2)“ and “M3 Scenario descriptions from a user perspective (D4.4)“. Generally the objective was **to map the user requirements to the technological possibilities**, design and develop the technological solutions, and also to design the trials and scenarios for testing the technologies.

- The objectives for **the 3rd period** included **the testing and validation of the COPE Concept and technologies in a full scale trial** in Kuopio. Professional users executing the scenario were observed and interviewed in order to evaluate the new concept and technologies.

# Common Operational Picture (COP)

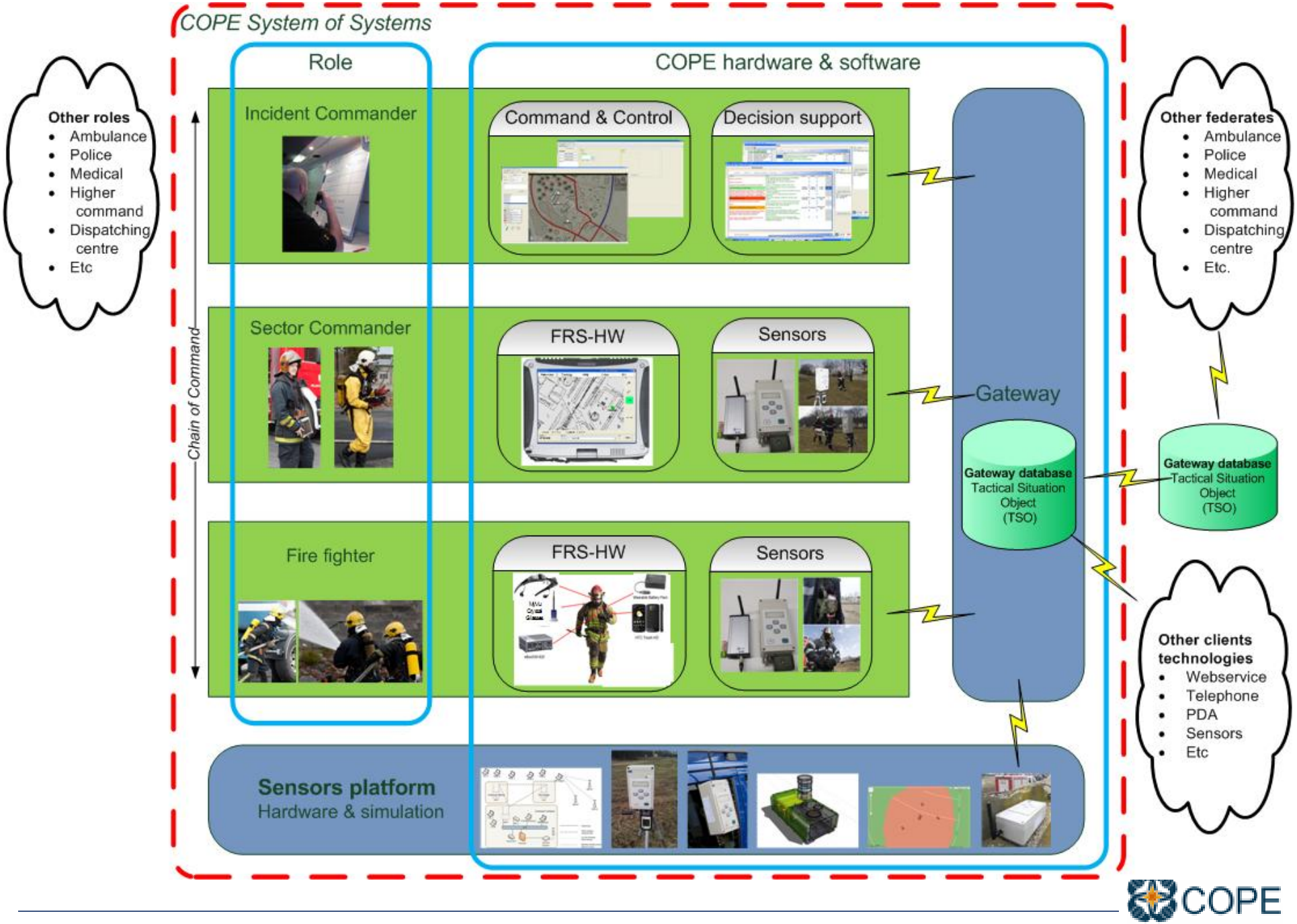
Emergency responders' on-line conception of the emergency situation which is as coherent as is possible.

The formation, sharing and presentation of the COP is supported by information and communication technological (ICT) tools.

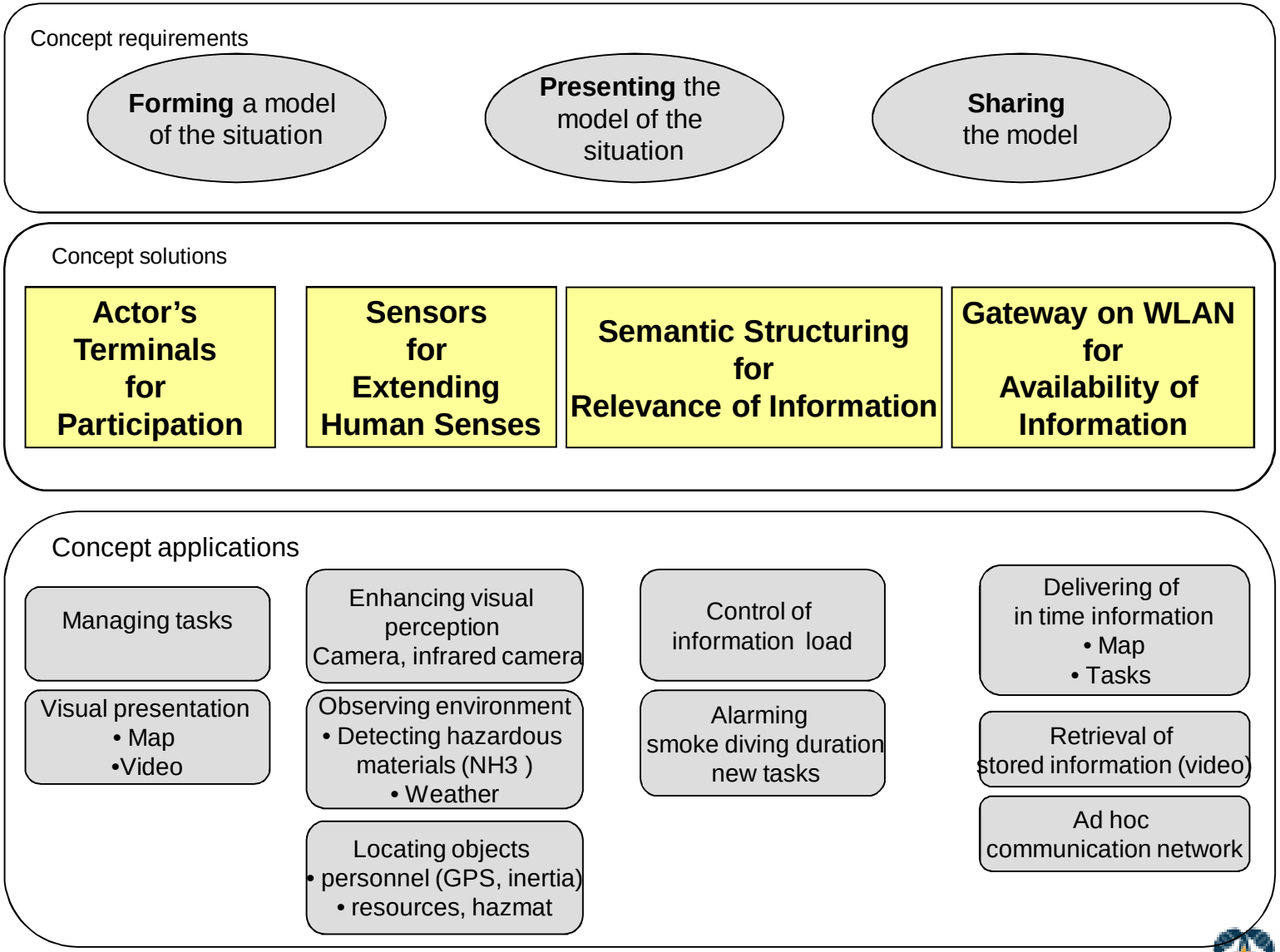
# COPE Concept - Requirements

On the basis of initial user interviews and existing literature three high level requirements were identified for ICT tools:

1. **Forming** a model of the situation
2. **Presenting** the model of the situation
3. **Sharing** the model of the situation


COPE System of Systems
Role
COPE hardware & software
Other roles
Ambulance
Police
Medical
Higher command
Dispatching centre
Etc
Incident Commander
Command & Control
Decision support
Sector Commander
FRS-HW
Sensors
Fire fighter
FRS-HW
Sensors
Chain of Command
Gateway
Gateway database
Tactical Situation Object
(TSO)
Other federates
Ambulance
Police
Medical
Higher command
Dispatching centre
Etc.
Gateway database
Tactical Situation Object
(TSO)
Other clients technologies
Webservice
Telephone
PDA
Sensors
Etc
Sensors platform
Hardware & simulation

# COPE Concept Solutions



# Actors’ terminals for participation

Command & Control system (C2)

Sector commanders’ system

Fire fighters’ systems

# Sensors Extending Human Senses

GPS positioning, inertia for indoor, sensor platform (temperature, gas etc)

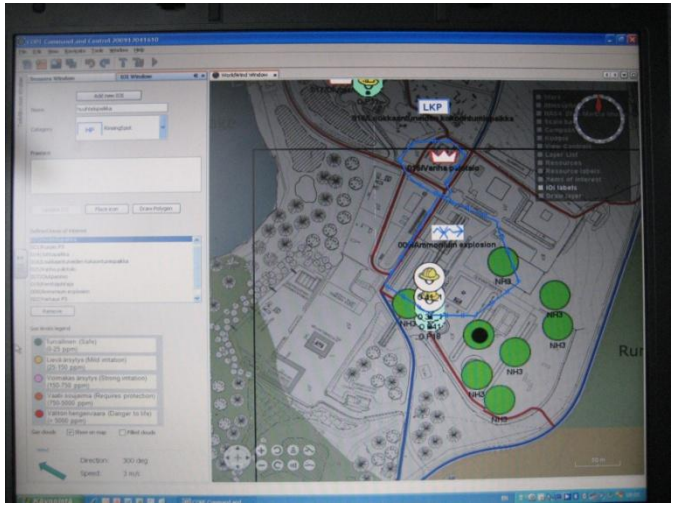
Deployable sensors for HazMat

– Helmet mounted thermal and video camera

— Local weather conditions observation

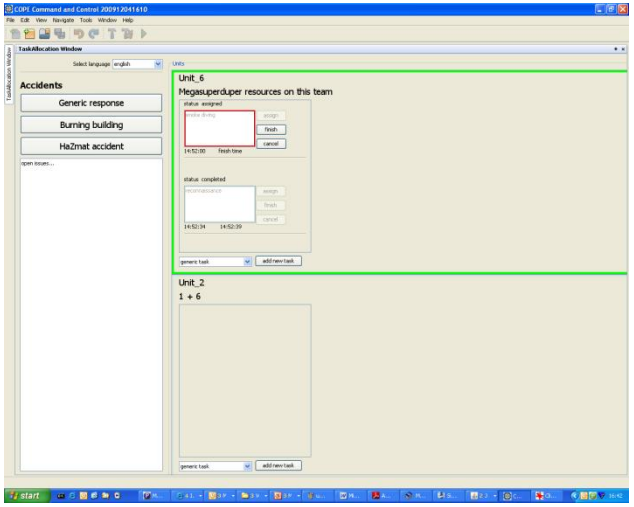
# Semantic Information System

All systems “speak the same language”

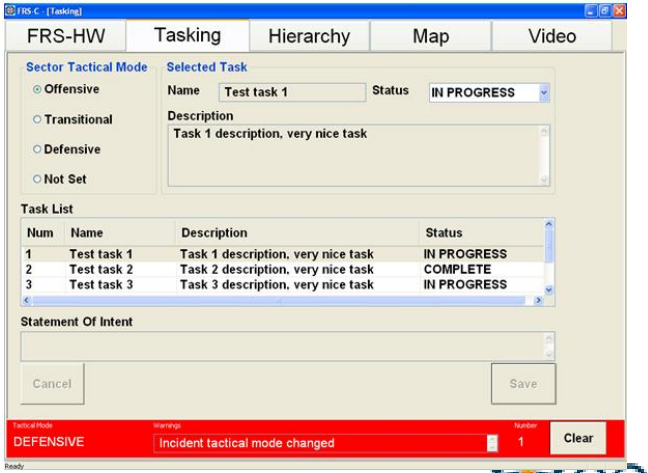


Information in C2

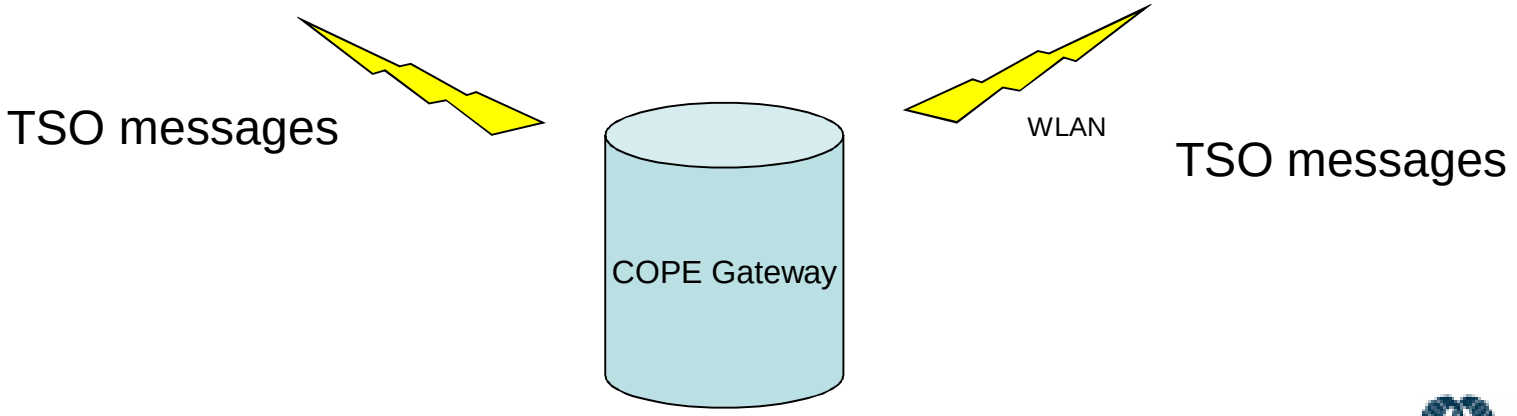
- measurements from sensors
- location of firemen
- regions and objects of interest
- explanations attached to the objects




Task information in C2 and SC’s terminal



# Availability of information: COPE Gateway on a WLAN



# COPE Concept Development

- The COPE concept was developed, tested and evaluated through extensive design experiments:
  - Two technology integration tests
  - Three end user exercises in realistic situations (extending in size)
- A large amount of data was collected of technology performance, end user performance, and experience
- Applicability of the COPE Concept was analysed with a Usability Case method

… more in user group …

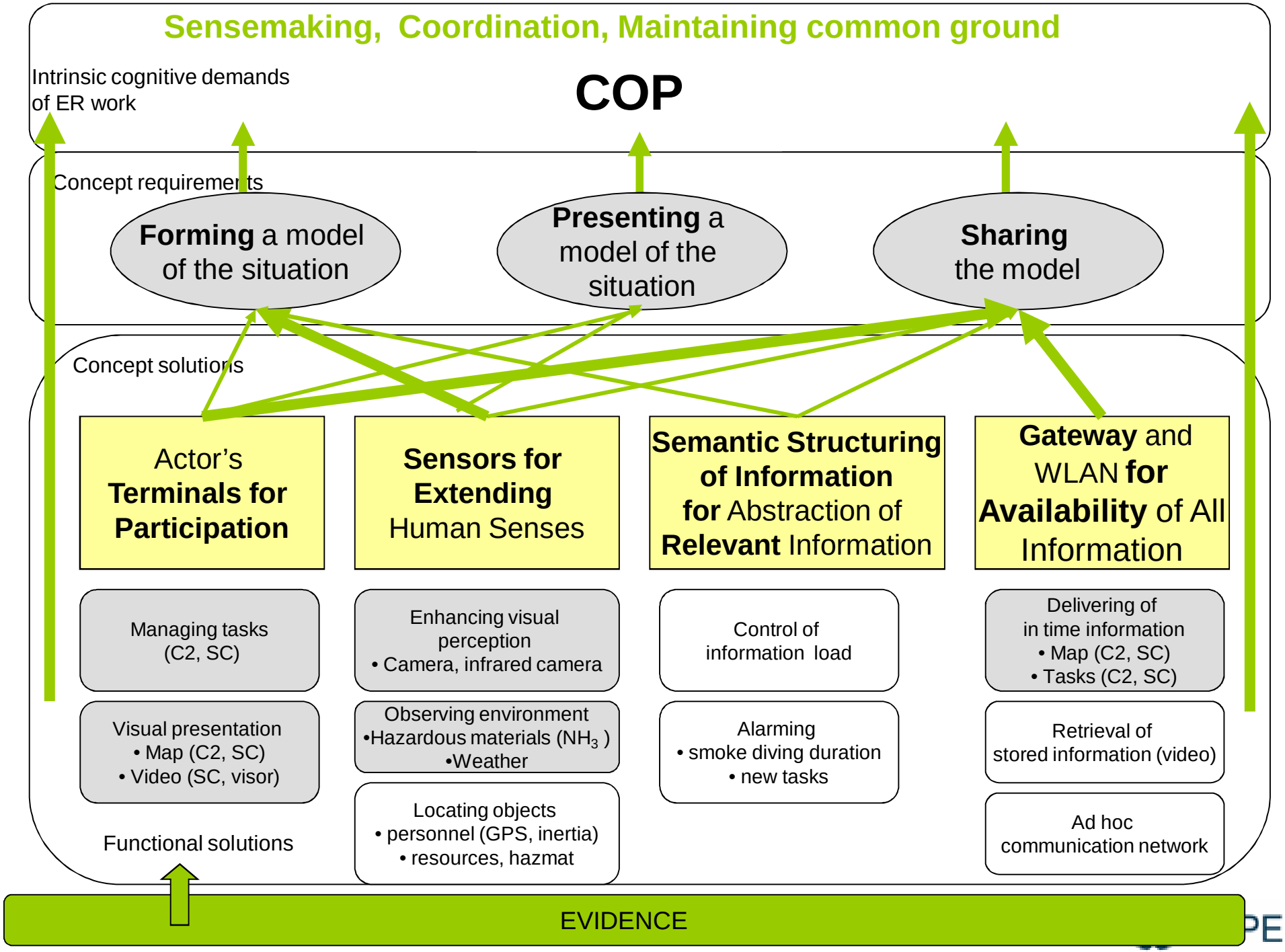
**Demonstration of COPE solutions for …**

**Forming** a model of the situation

**Presenting** a model of the situation

**Sharing** the model

COPE


Sensemaking, Coordination, Maintaining common ground
Intrinsic cognitive demands of ER work
COP
Concept requirements
Forming a model of the situation
Presenting a model of the situation
Sharing the model
Concept solutions
Actor's Terminals for Participation
Sensors for Extending Human Senses
Semantic Structuring of Information for Abstraction of Relevant Information
Gateway and WLAN for Availability of All Information
Managing tasks (C2, SC)
Visual presentation • Map (C2, SC) • Video (SC, visor)
Enhancing visual perception • Camera, infrared camera
Observing environment •Hazardous materials ($NH_3$) •Weather
Locating objects • personnel (GPS, inertia) • resources, hazmat
Control of information load
Alarming • smoke diving duration • new tasks
Delivering of in time information • Map (C2, SC) • Tasks (C2, SC)
Retrieval of stored information (video)
Ad hoc communication network
Functional solutions
EVIDENCE

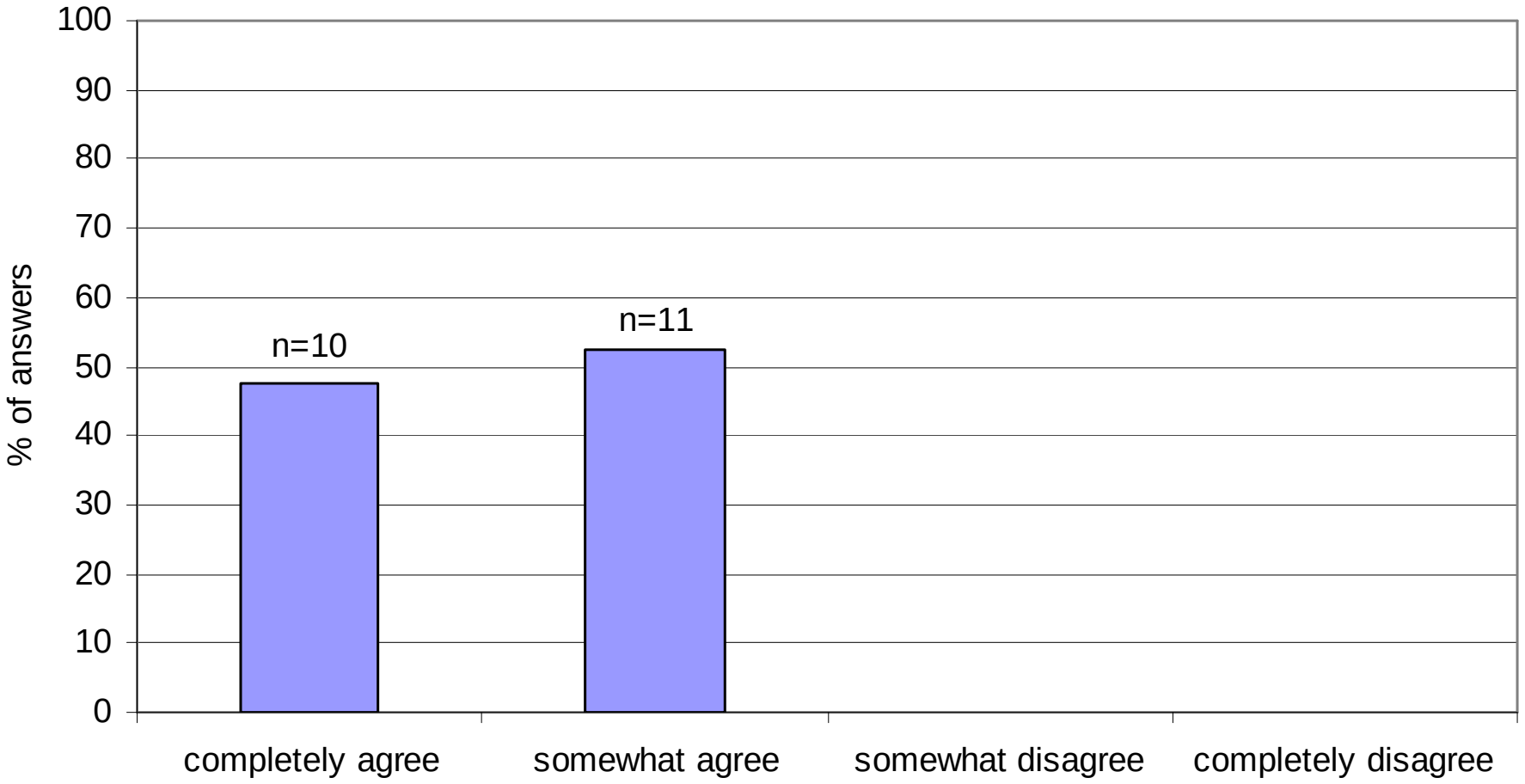
# COPE Concept - User Experience Results

User experience data was collected after the final trial
from all the end users
who had tested the COPE system

Concept - if fully developed - enhances COP ?

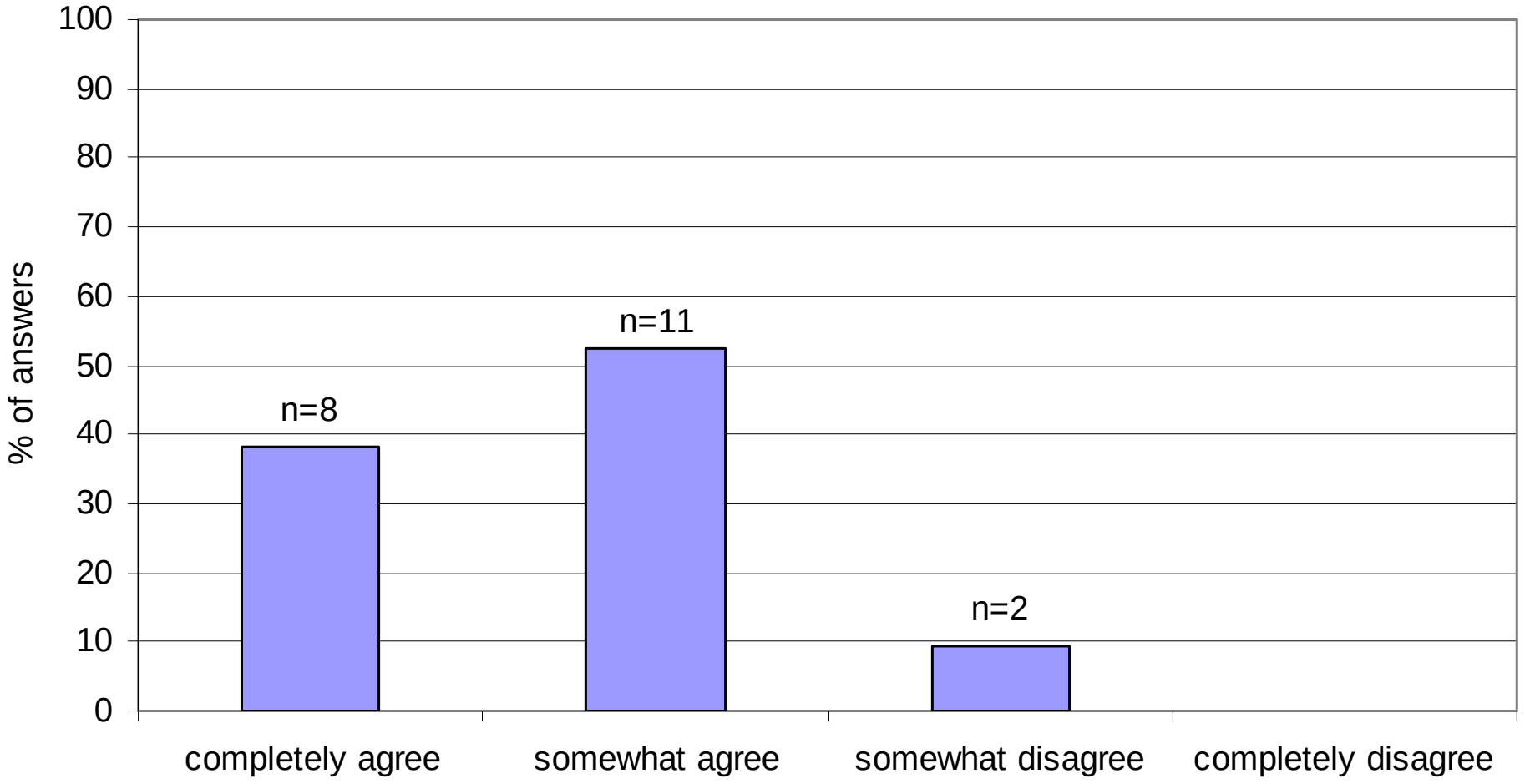
Could it be applied in professional use ?

'Common operational picture would be enhanced if this kind of (but fully developed) new technology was used in emergency response.'




COPE

'When fully developed, the system could fit well in the professional use in the future'




COPE

# COPE – Conclusions

Usage-centred design applied included a thorough analysis of user activity and co-design with technology development

All the developed technologies worked well when tested separately

COPE concept supports the functions needed for enhancing COP

- ✓ Forming a model of the situation
- ✓ Presenting the model
- ✓ Sharing the model


# Thank You !

COPE is a FP7 Security Research project

SEVENTH FRAMEWORK PROGRAMME

VTT, Technical Research Centre of Finland
BAE Systems (United Kingdom)
BAE Systems C-ITS (Sweden)
TCD, Trinity College Dublin (Ireland)
UTI Group (Romania)
GMV-Skysoft (Portugal)
CESS, Centre for European Security Strategies (Germany)
IGSU, General Inspectorate for Emergency Situations (Romania) ESC, Emergency Services College (Finland)

http://cope.vtt.fi


# COPE- PROJECT

## - *END USER EXPERIENCES AND LESSONS LEARNED* -

Aapo Immonen

Researcher

Emergency Services College, Finland

PSCE-Conference
Amsterdam
30. Nov. 2010

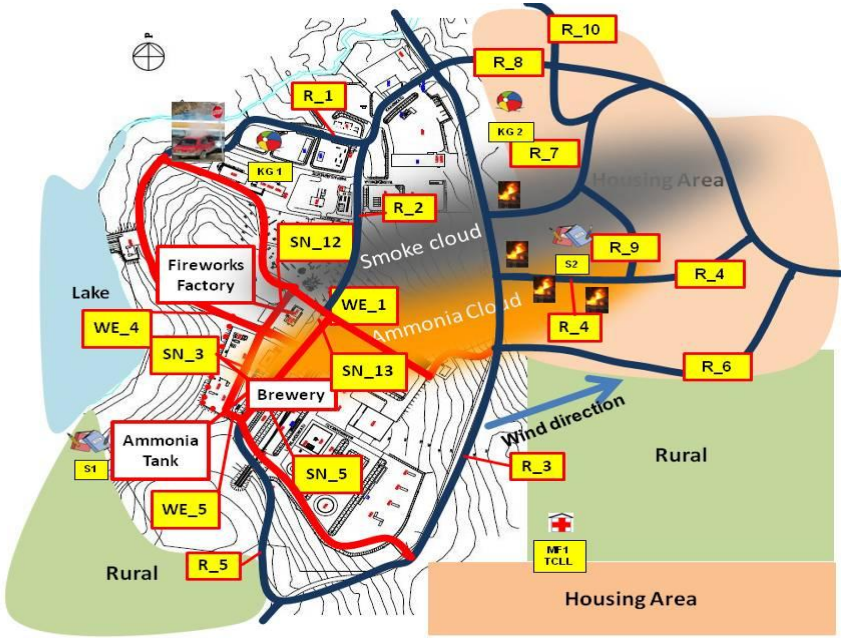
COPE

# THE SITE OF COPE TRIAL

PSCE, 30 NOV Amsterdam

COPE

# THE FINAL TRIAL




PSCE, 30 NOV Amsterdam

COPE

# .. AND HOW TO GET THERE

- Several iterative cycles took place
- Focus on details in the process e.g. validation of research methods or the recruitment motivation process of the end-users and / or some bits and pieces of technology.
- Abandon the ideas that don't work, take the ideas that work and move on to the next round.
- Expand the demo / trial and test the next idea. Again, abandon the ideas that don't work, take the ideas that work and move on to the next round.
- At the end you should have technology, methods and needs useful for the final trial
- IMPROTANT: Structured validation methods!
- There is a need for a' Guide of best practices'

COPE

# UNITS INVOLVED IN THE FINAL TRIAL

- 6 IC ( 3 operative ) all using the system
- 9 SC 3 using the system
- 21 Fire- Fighters , 4 using the system
- Emergency Response Centre Operator
- 2 police units
- Table top

+ supporting staff ( instructors security , admin, tech. support etc. )

- Approximately 60 person all together consisting ESC staff, local fulltime fire brigade personnel and police as well as ESC officer students

COPE

# SOME PRACTICAL ISSUES

- End user involvement and motivation is essential
- There is a difference what would be nice to demonstrate and what are the needs
- Evaluate the usability of the test site, is it possible to record the trial(s), duplicate it, interview the end-users etc.
- How to get all stakeholder groups involved
- Language barrier

COPE

# OBJECTIVES FROM THE END-USER PERSPECTIVE

- Most ICT related development projects have concentrated explicitly on technical issues, this is insufficient from the Emergency Management perspective

- *The focus of the work lays more in the questions:*

  - ✓ *How can the Emergency Management process change once utilizing ICT?*
  - ✓ *Is the environment mature to engage the change of process stemming from the possibilities provided by ICT?*
  - ✓ *Is the technology acceptable in order to take full advantage of ICT?*
  - ✓ *What should be done in order to change the operational environment more compliant towards the change in the processes?*
  - ✓ *What are the technical possibilities and limitations of ICT once improving efficiency of the Emergency Management process ?*

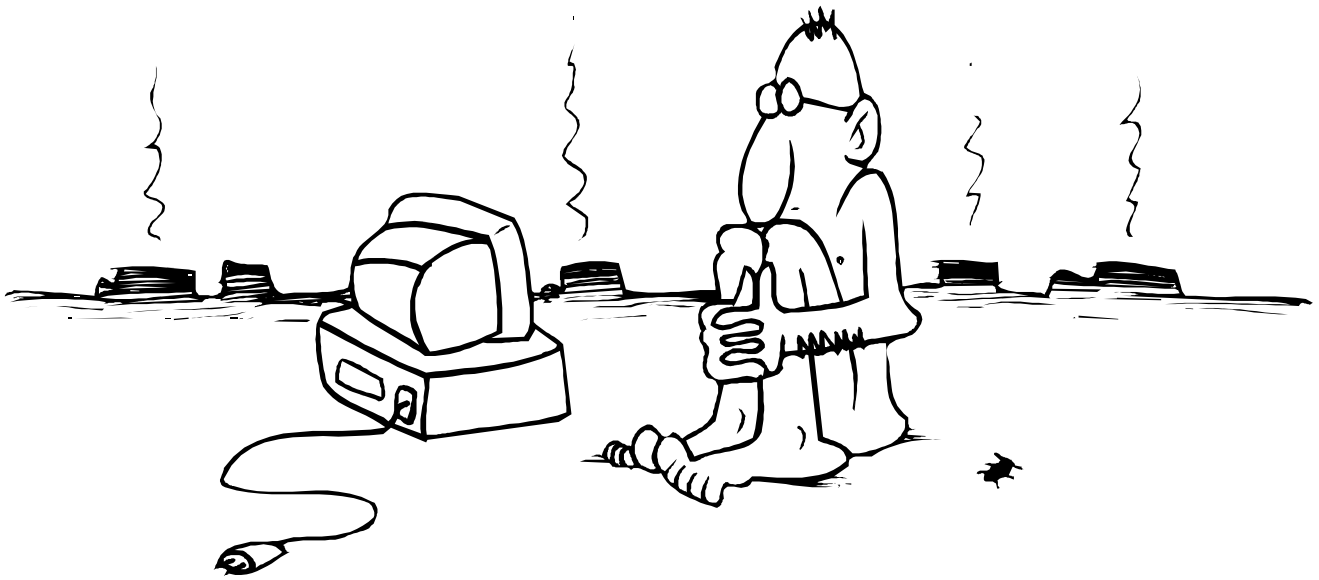
COPE

# CONCLUSIONS

- ***The domain has the tendency of relying on tacit knowledge, the SECI model does not seem to work . ICT has a major role here***
- ***There is room and needs for evidence based research***
- ***The environment  assumes that ICT plays an essential part in Emergency Services, is there evidence of more efficiency after ICT implementation?***
- ***There are a lot promises, but not all of the promises of ICT have been able to fulfilled***
- ***Is the technological approach valid?***
- ***End user viewpoint essential, interviews are a good tools***
- ***Focus in the change in the process with the assistance of technology***
- ***Maturity of the environment and the end users once changing the process with ICT***
- ***Would we do it again? Definitely!***

COPE

# Questions, Comments



# COPE Project

## Dissemination Industrial Committee

Johan Forsling, BAE Systems C-ITS, 2010-11-30

# Agenda

Part 1

- Introduction to the COPE project
- Overview of each technical component

Part 2

- Questions & answers

# Project goals and strategies

Goals

- Improve the Common Operation Picture (situational awareness)
- Use COTS solutions and novel technologies

Strategies

- User driven development
- Reuse of previous and ongoing EU projects
- Trial to demonstrate proof of concept

# Development fundamentals

## TSO

- Tactical Situation Object
- http://www.tacticalsituationobject.org/
- Developed by the EU project OASIS
- Tactical Situation Object
  - A view of the situation stored in XML
  - A structured data set representing the major information of the event

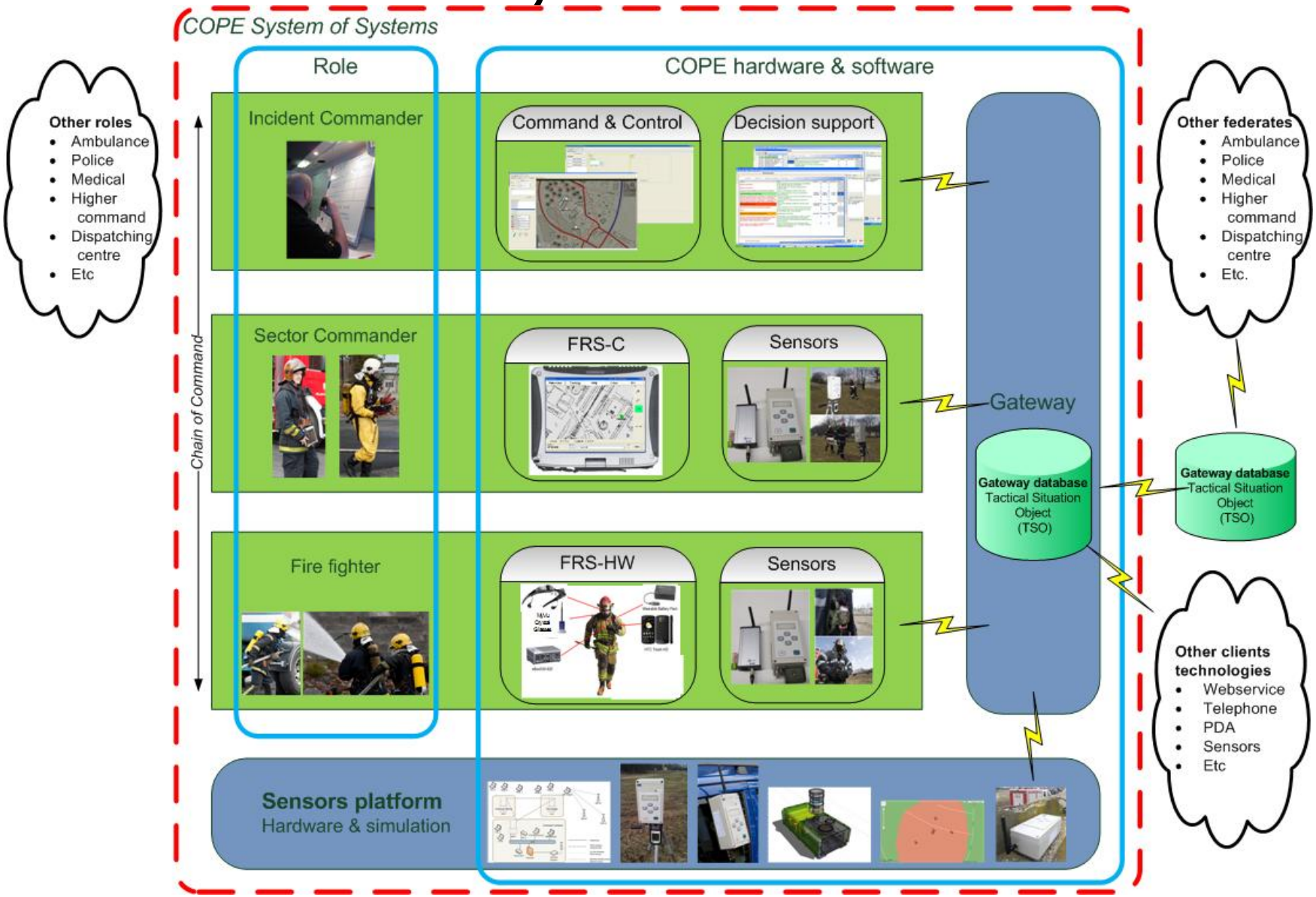
## Data Dictionary

- The valid values from the TSO model used in COPE
- Additions to TSO
- The process supports integration

## COPE Gateway

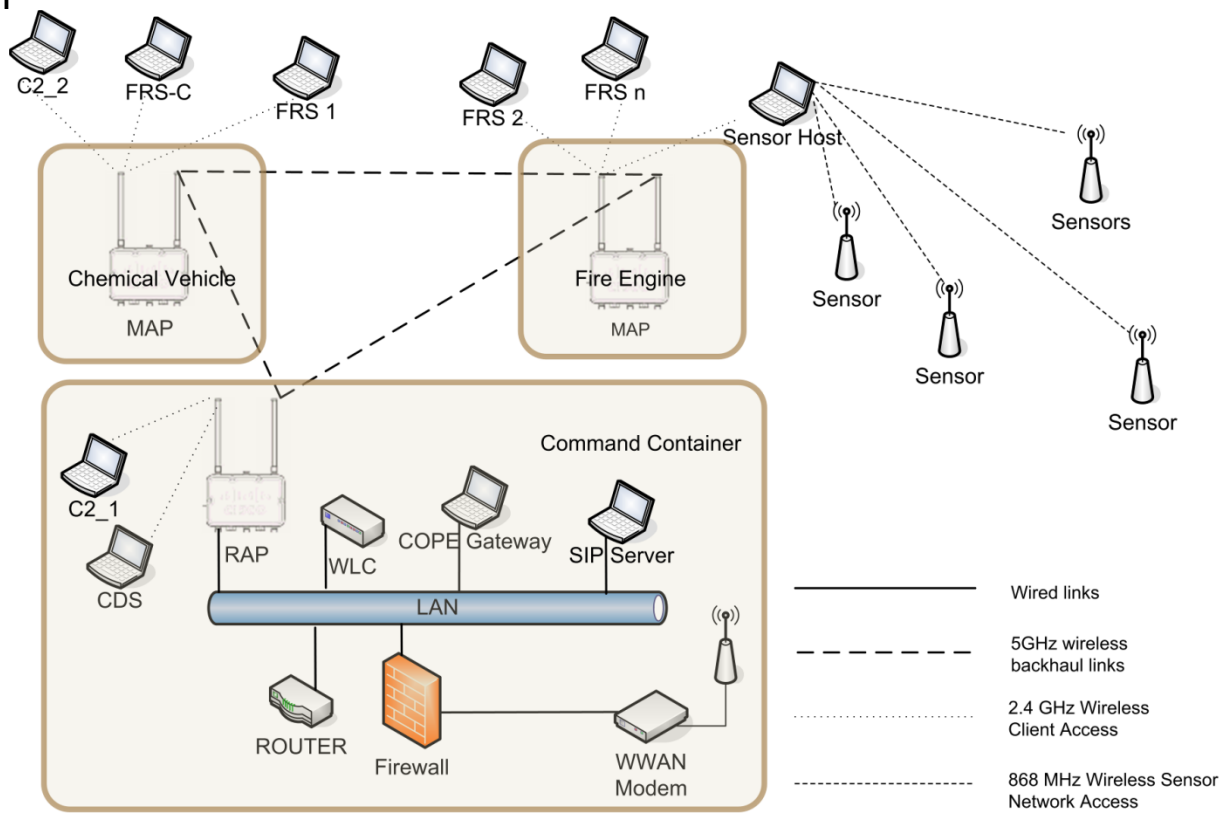
- Service Oriented Architecture (SOA)
- Is a web service
- Possibility to use a network of gateways
- Network of gateways enables communication between units and redundancy
- Data storage

# COPE System Overveiw



# Communication system

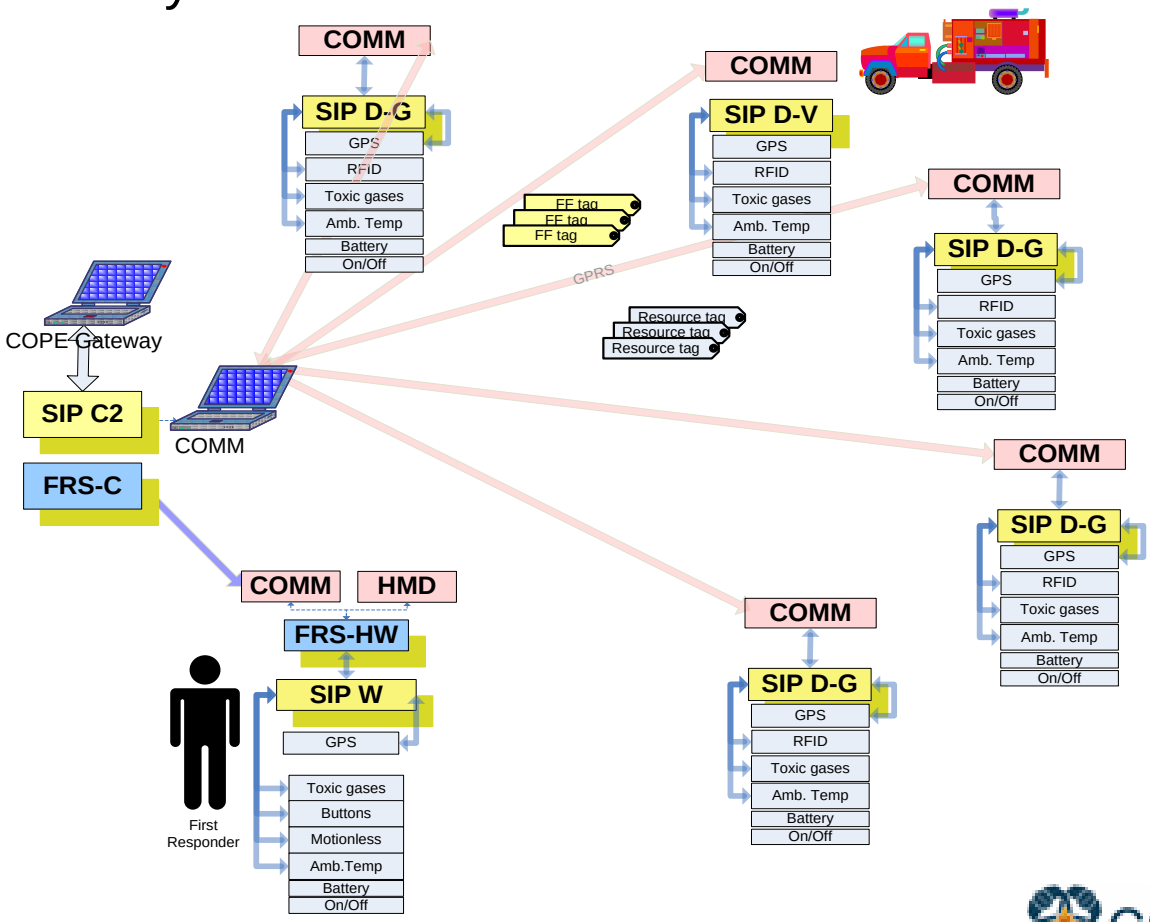
- Stand-alone system
- Wireless local area ad-hoc mesh network
  - WLAN 5GHz Wifi 500 m LoS mesh network
  - WLAN 2.4 GHz 100 m LoS client communication
- Sensors are integrated on the network
  - WSN 868 MHz
- Voice comm not included in COPE
  - TETRA system




COPE

# COPE Sensors overview

- Sensor network
- Plug-and-play connectivity
- Connection to the Gateway via the SIP C2 software



# COPE Sensors types

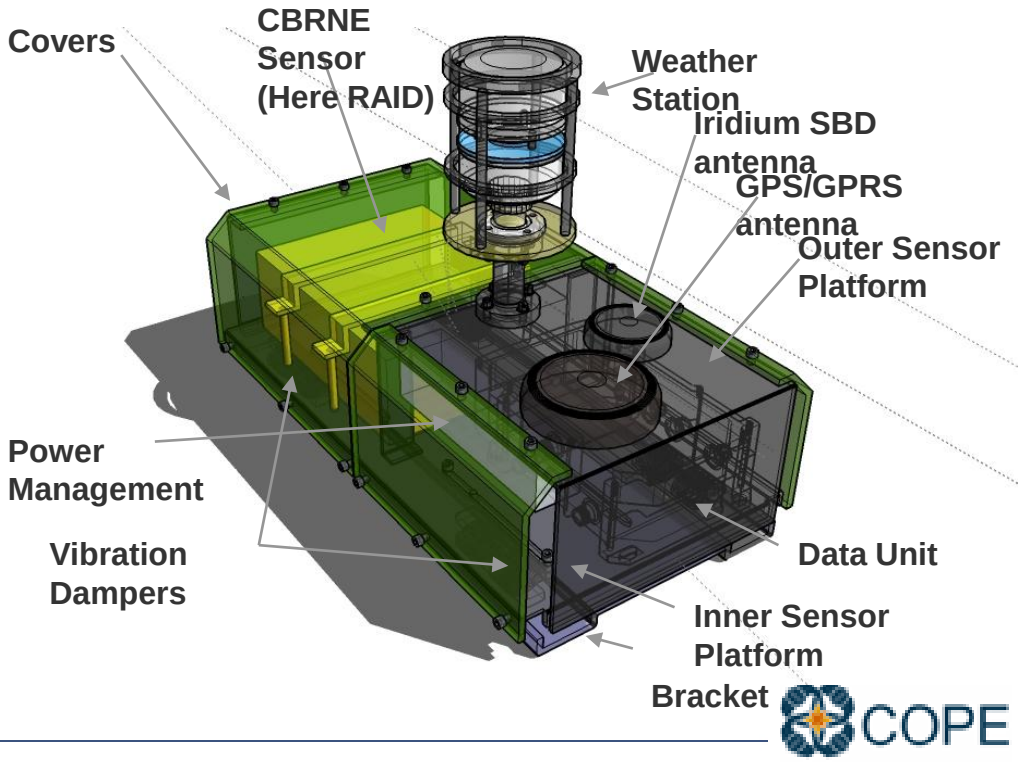
- Deployable
  - Tripod
  - Vehicle
- Wearable
  - Standard
  - Indoor navigation based on dead reckoning
- Common functionality
  - Environmental safety (toxic gases, temperature)
  - Localization (GPS)
  - Resource identification (RFID)


Wearable

Deployable

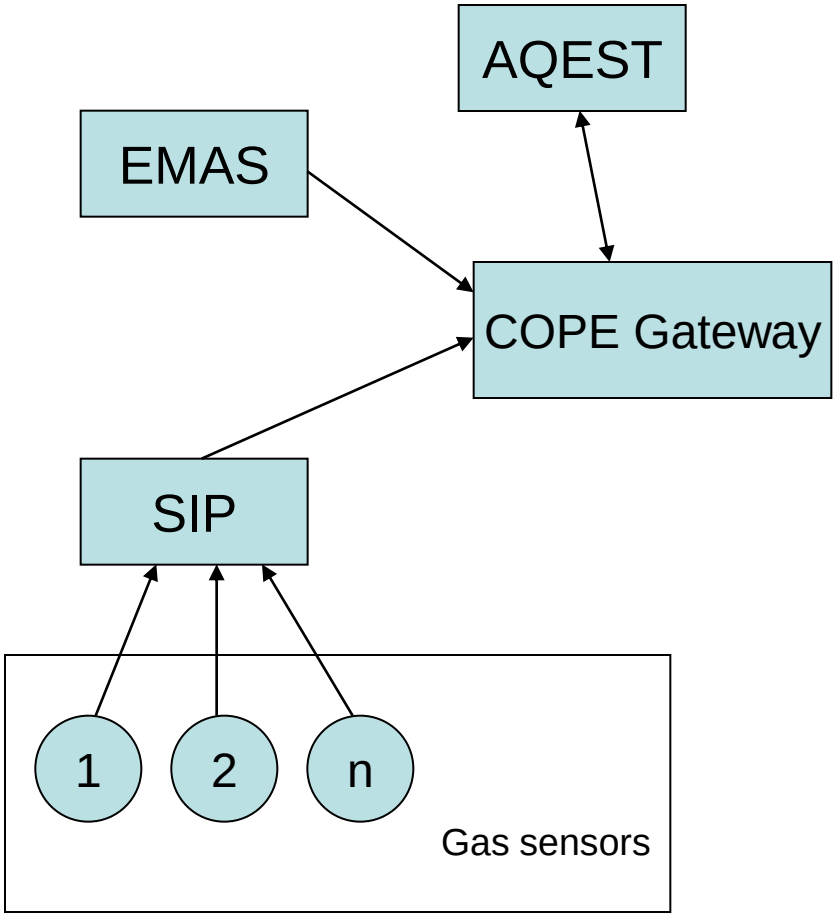
# Sensor: EMAS

- EMAS - Environmental Monitoring and Analysis System
- Main features
  - Rugged housing
  - Types of sensors are configurable
  - Genere purpose data unit
  - Multiple communication options
- COPE adoptations
  - COPE Gateway connection
  - TSO messages



# AQEST

- Air Quality Estimator
- Gas cloud estimation algorithm
- Input
  - Sensor values (simulated or real)
  - Weather information
- Output
  - Gas cloud described as a number of polygons
- Results are sent to the COPE Gateway



# First Responder System – Human Wearable

# First Responder System - Control

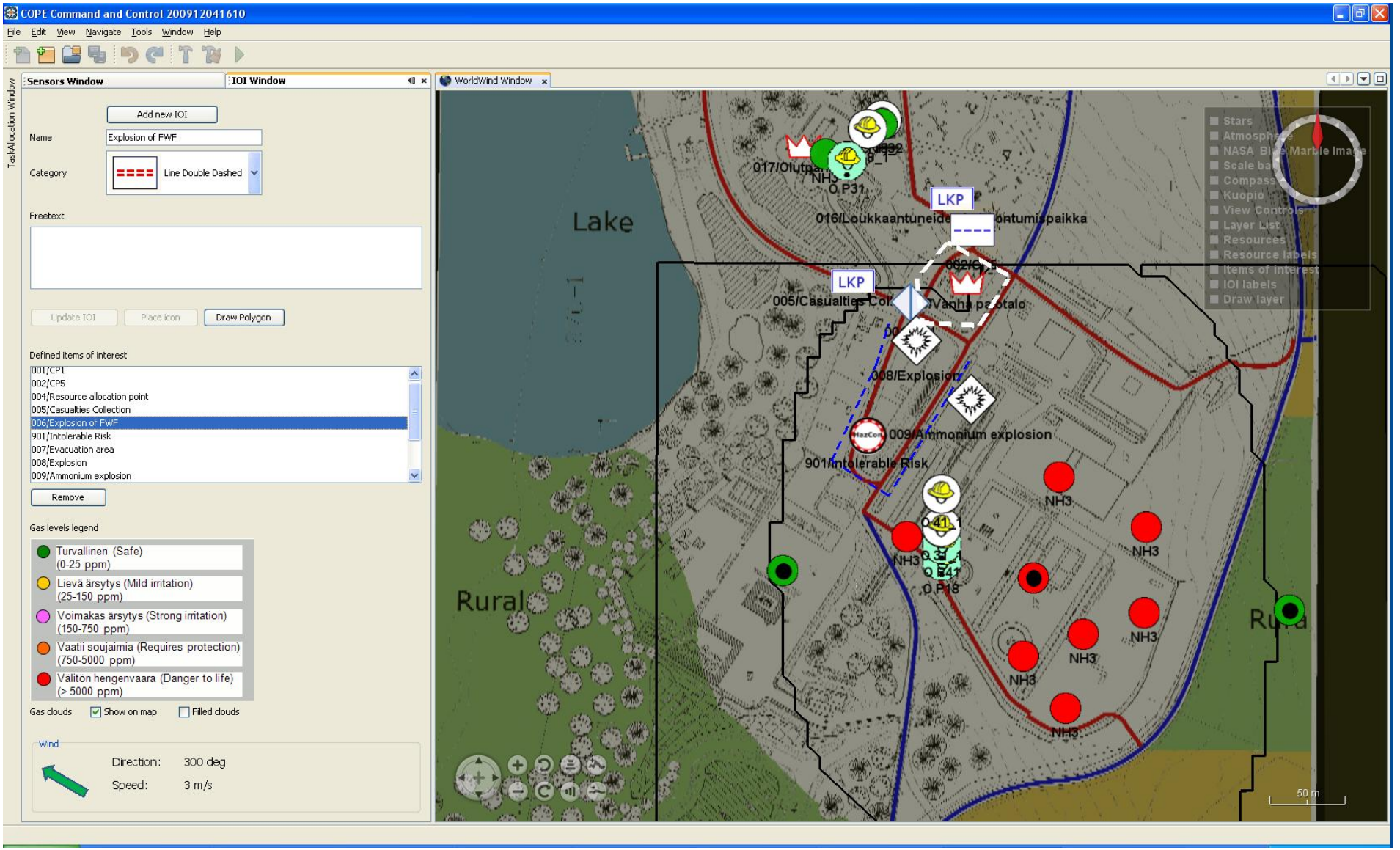

- Tablet PC
- Shoulder worn
- Wireless
- Map, tasking and streaming video

COPE

# COPE Command and Control (C2)

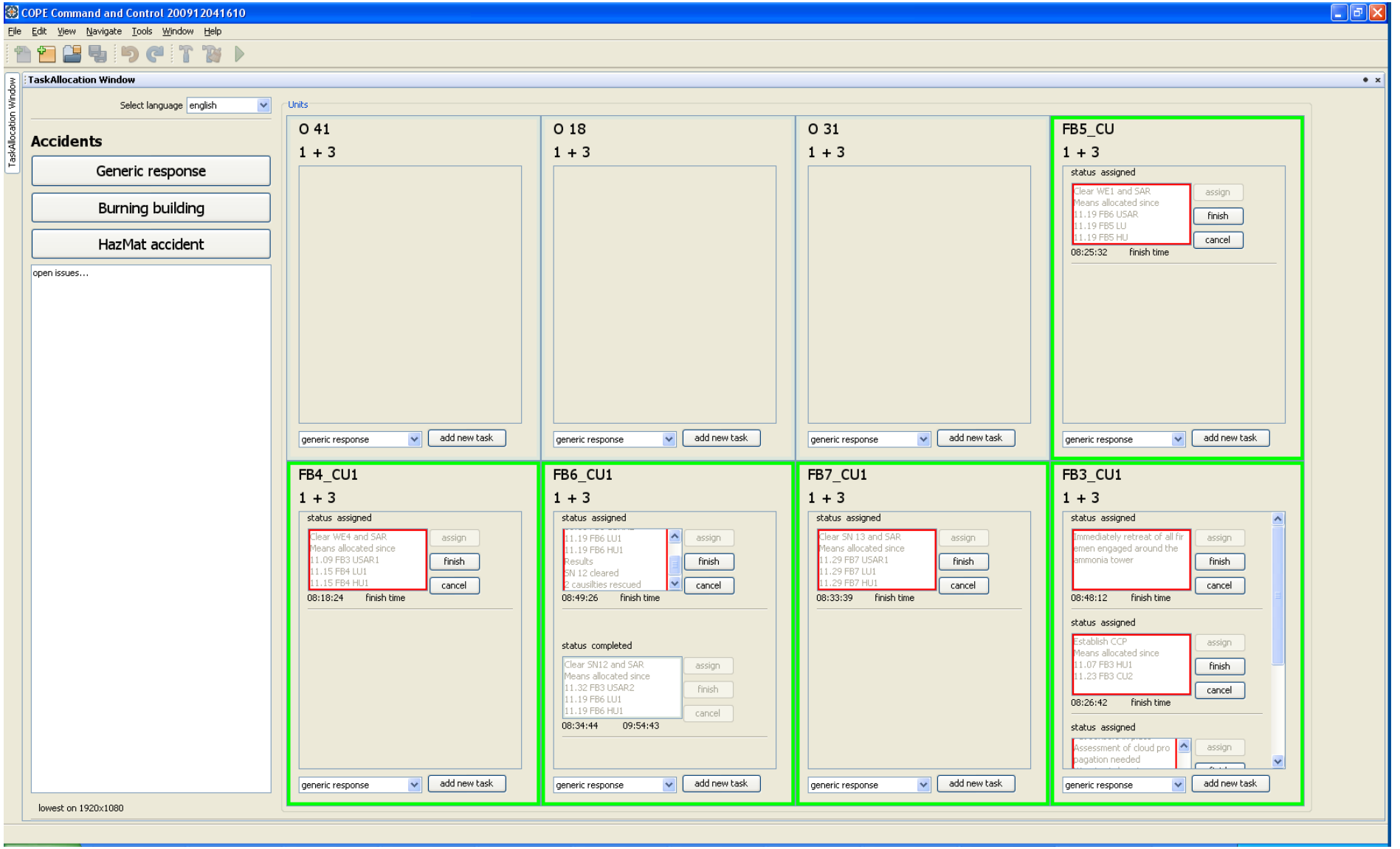
- Command and control functionality used by the Incident Commander
- Possibility to connect multiple number of C2 clients
- Two main windows
  - Map
  - Tasking
- Major functionality
  - Items of interest (victims, medical points, vehicles, rinsing spots etc)
  - Visual planning tools (functional and geographical sectorization, cordoning off)
  - Map support (zoom, pan, layers etc)
  - Tasking (assign goals including handshake)

# C2 Map window




COPE

# C2 Tasking window



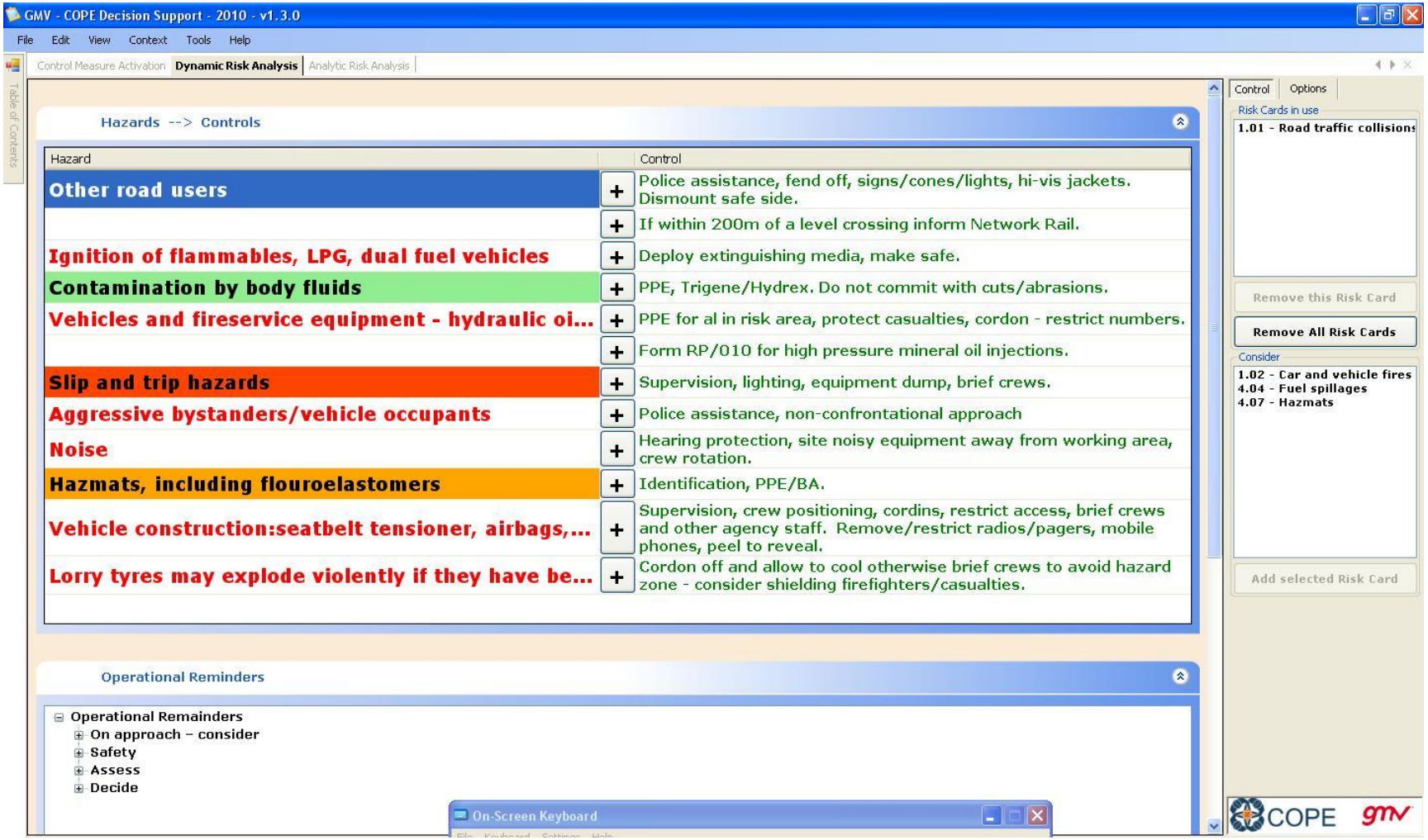

COPE

# COPE Decision Support

- Risk analyser
  1. Dynamic risk analysis
  2. Analytic risk analysis
- Site map
  - Display of Common Operational Picture
  - Insertion/Removal of HazCons resulting from the Risk Analysis in the COP
- Gateway communication
  - TSO messages

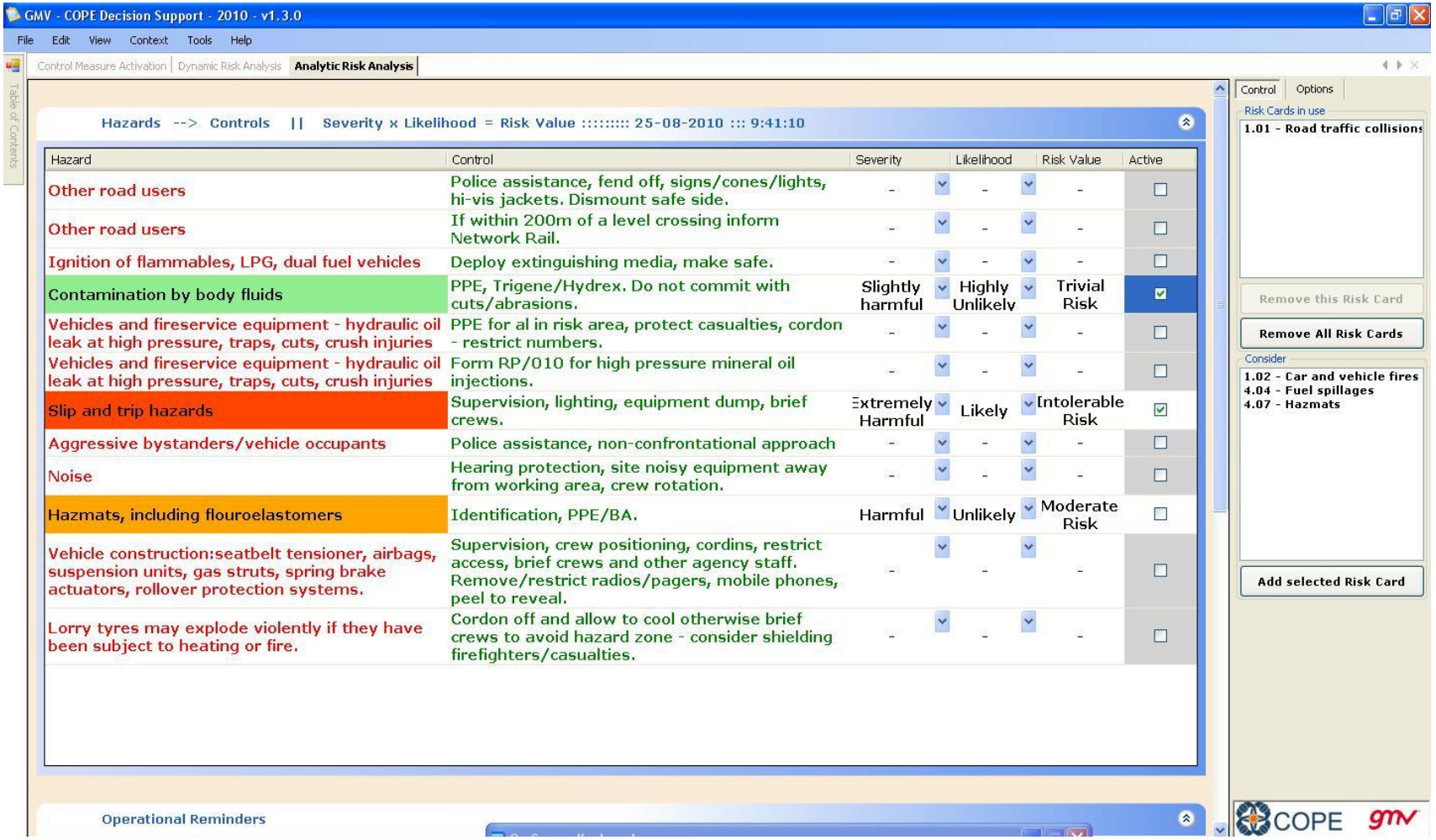
# COPE Decision Support

Dynamic risk analysis

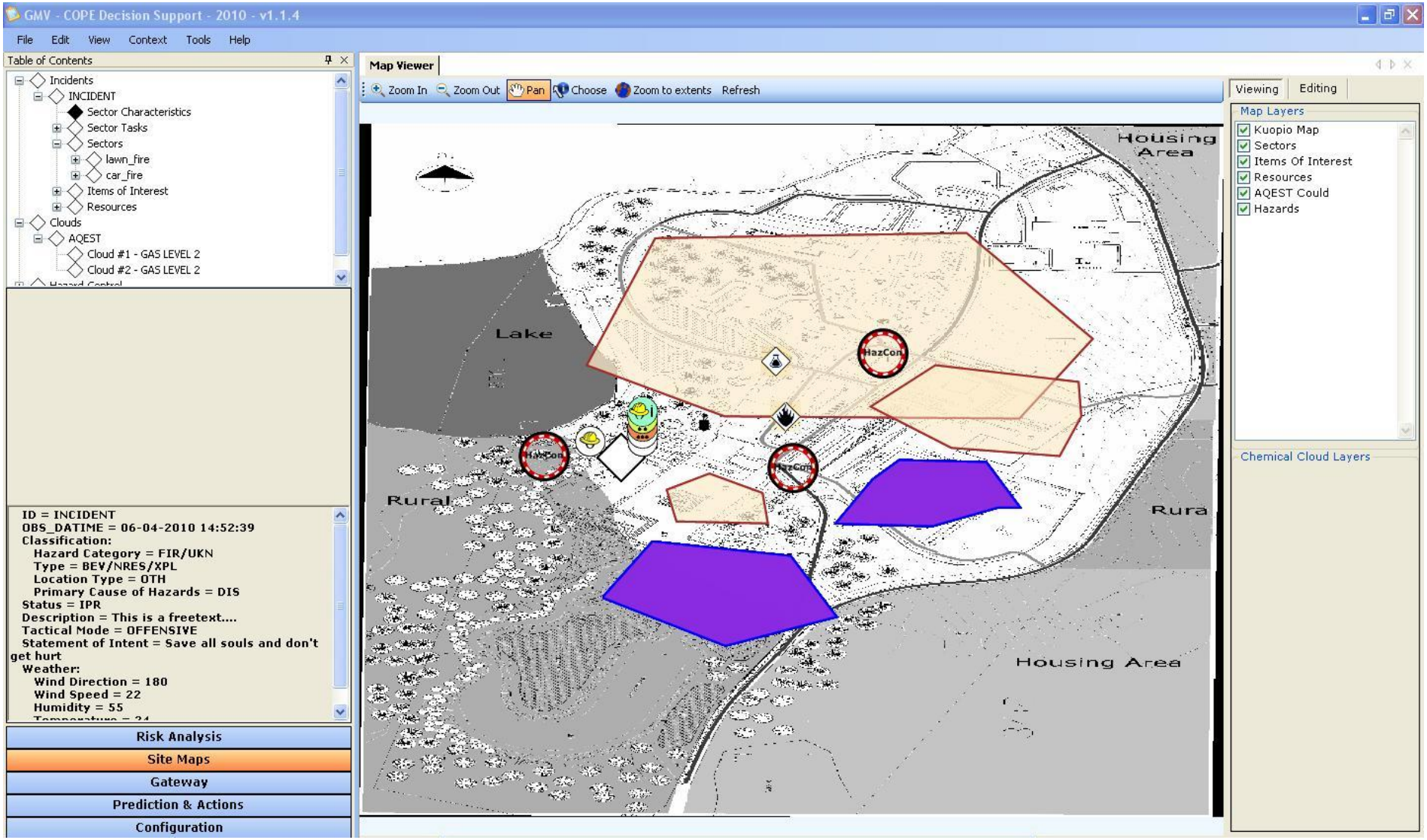


# COPE Decision Support

Analytic risk analysis



# CDS S/W Features – Site Map



# Questions & answers

| Partner | Area | Present |
|---|---|---|
| VTT | Communication | Yes |
| UTI | Sensors | Yes |
| BAE UK | First responder equipment | Yes |
| GMV | Decision support | No |
| Bofors | Sensors | No |
| C-ITS | Command & Control | Yes |


# The COPE Trial setup and Evaluation

Reinhard Hutter

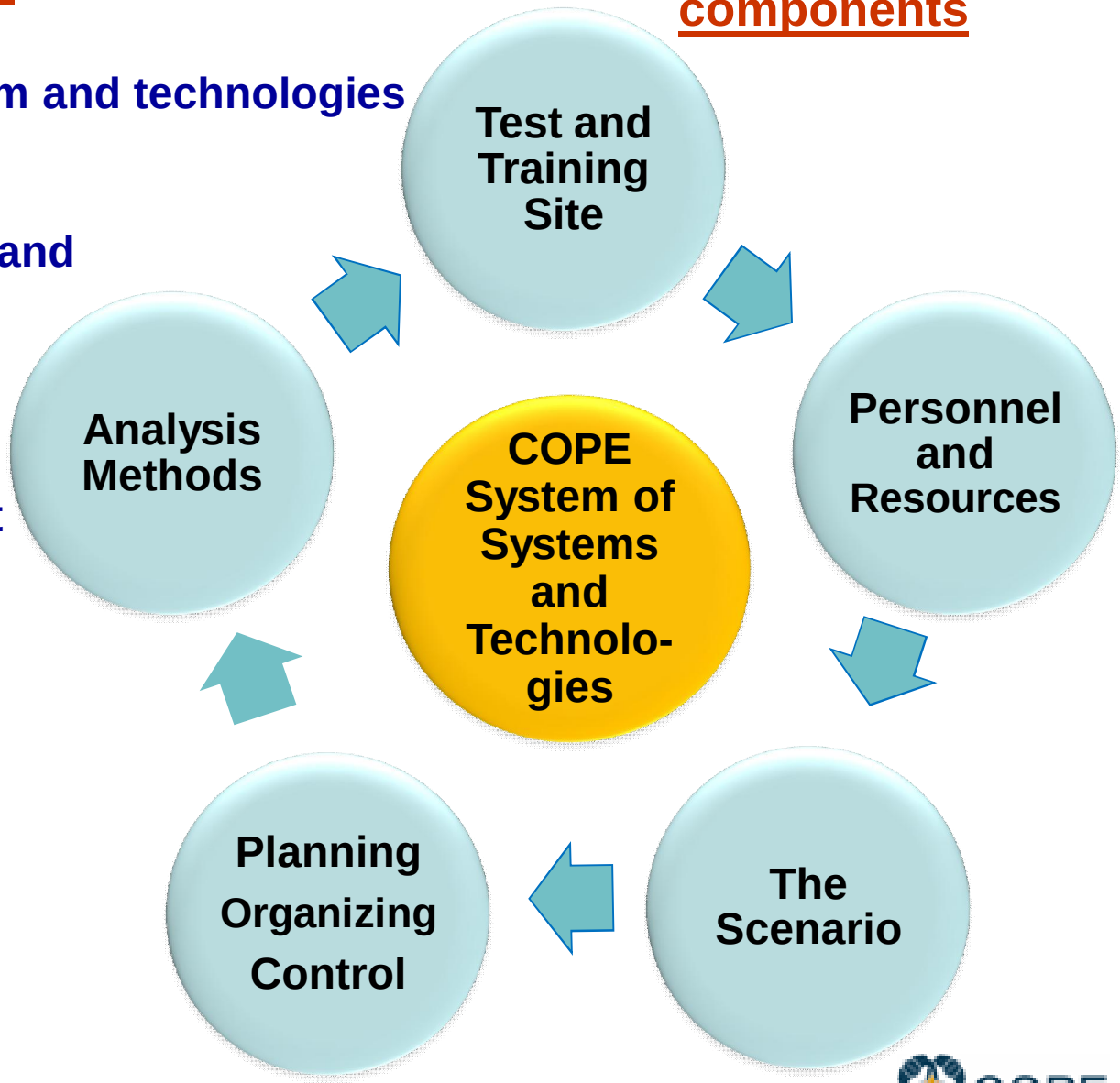
Centre for European Security Strategies

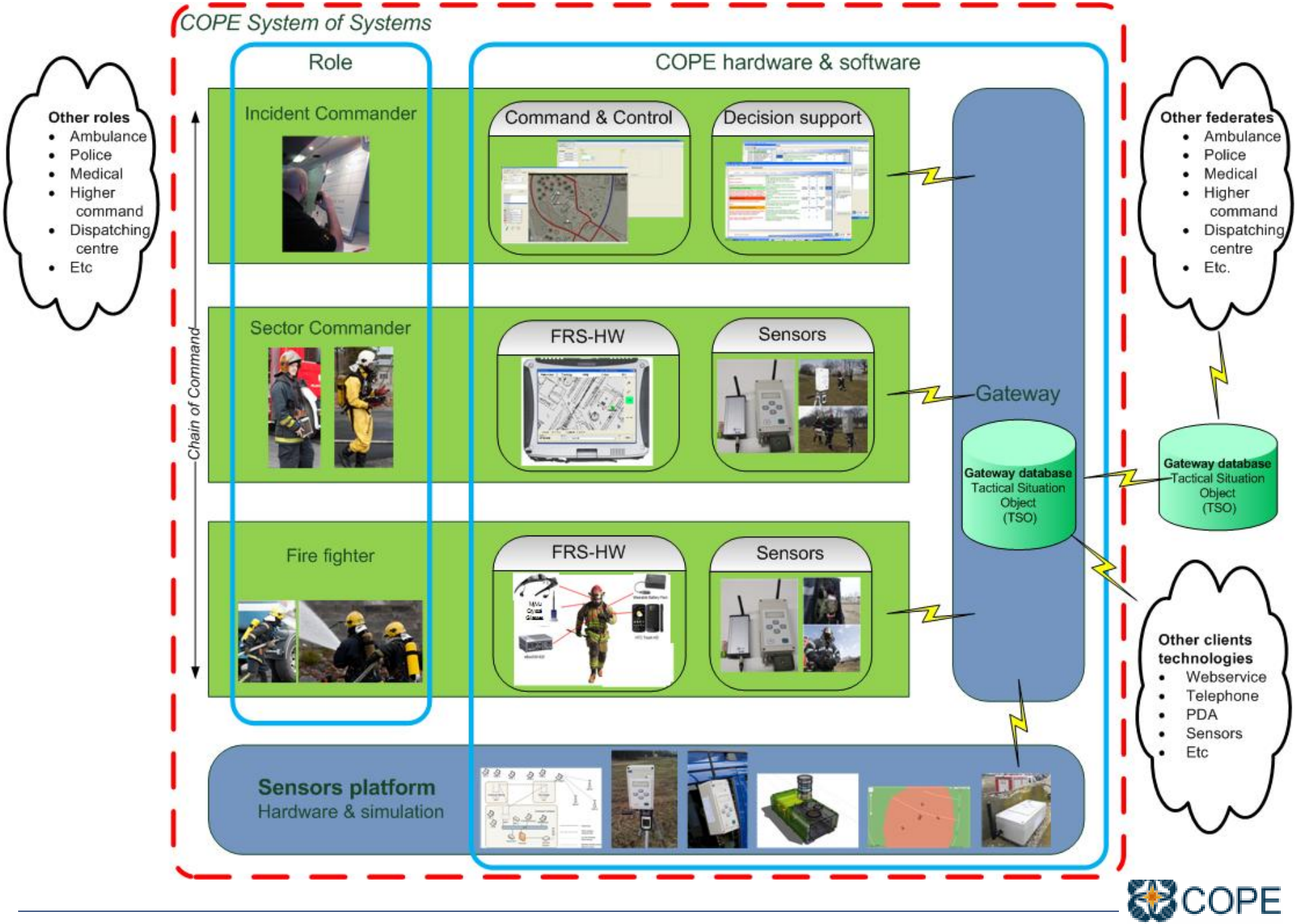
PSCE-Conference
Amsterdam
30. Nov. 2010

## The trial main objectives

- Expose the COPE system and technologies to a realistic scenario
- Measure performance
- Measure their usability and acceptance (HF)
- Generate measurable information
- Perform detailed and final overall assessment
- Draw conclusions for the future

## The main trial components



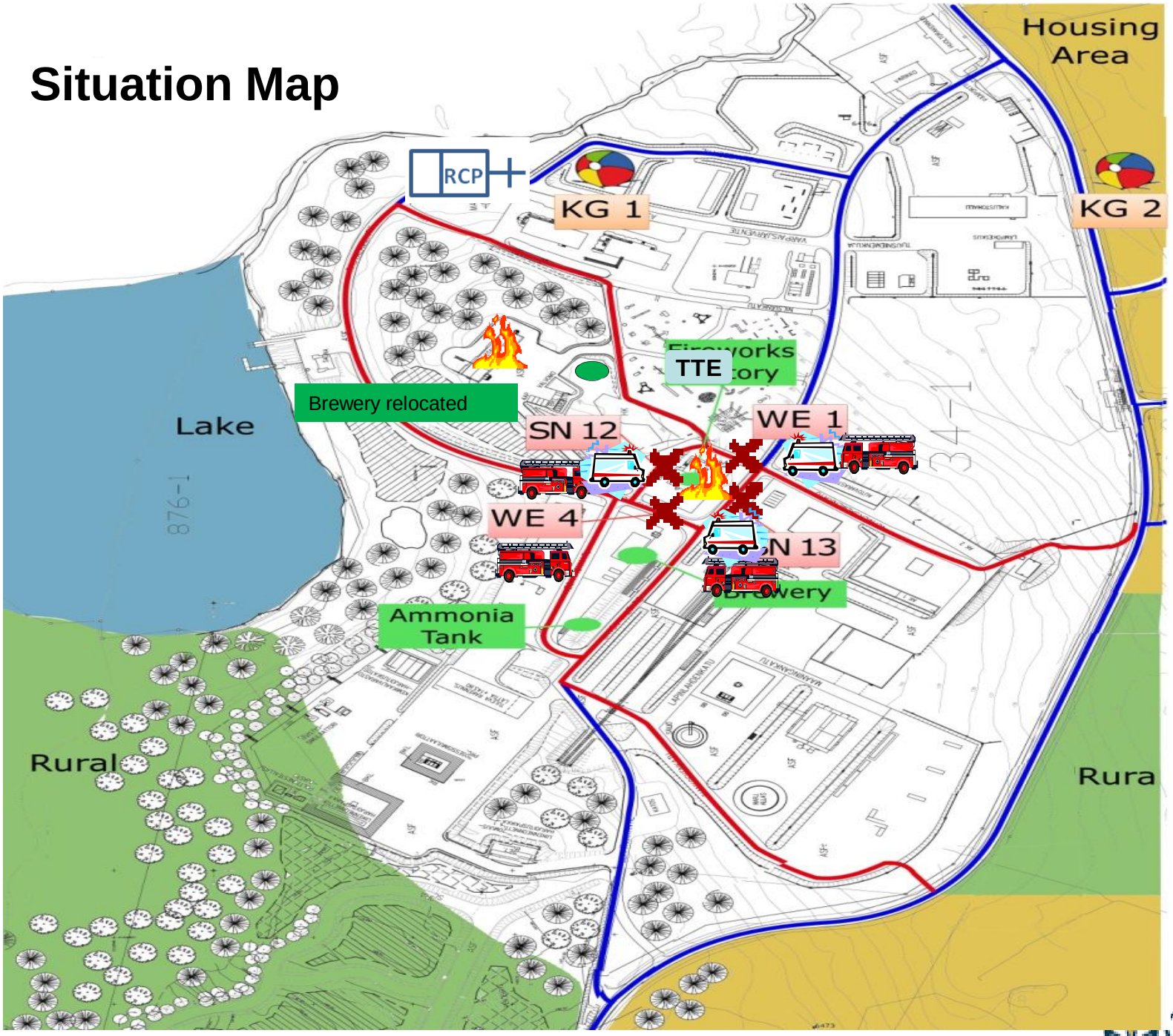

COPE System of Systems
Role
COPE hardware & software
Other roles
Ambulance
Police
Medical
Higher command
Dispatching centre
Etc
Incident Commander
Command & Control
Decision support
Sector Commander
FRS-HW
Sensors
Fire fighter
FRS-HW
Sensors
Chain of Command
Gateway
Gateway database
Tactical Situation Object
(TSO)
Other federates
Ambulance
Police
Medical
Higher command
Dispatching centre
Etc.
Gateway database
Tactical Situation Object
(TSO)
Other clients technologies
Webservice
Telephone
PDA
Sensors
Etc
Sensors platform
Hardware & simulation

COPE

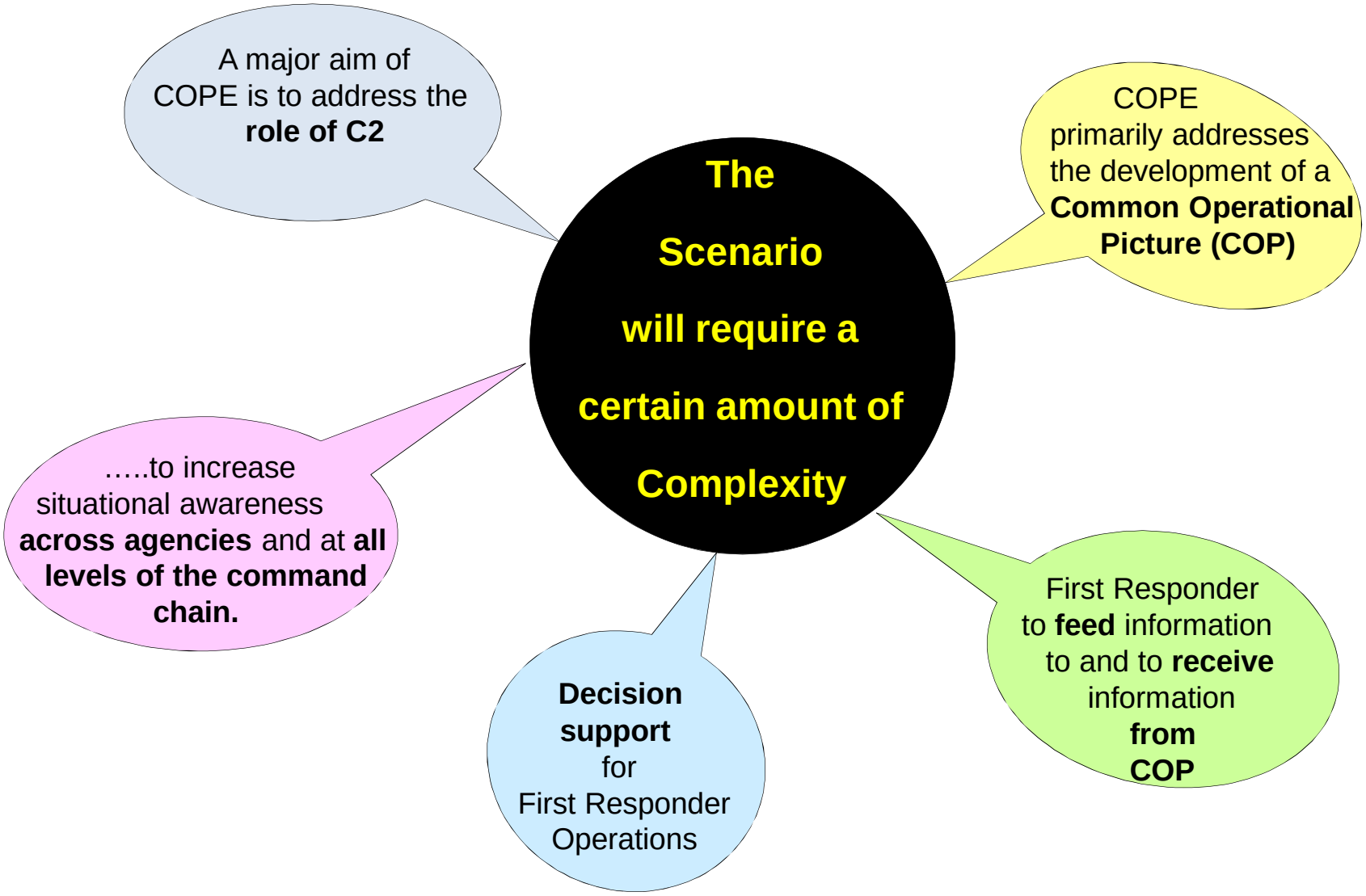
## The Exercise Framework

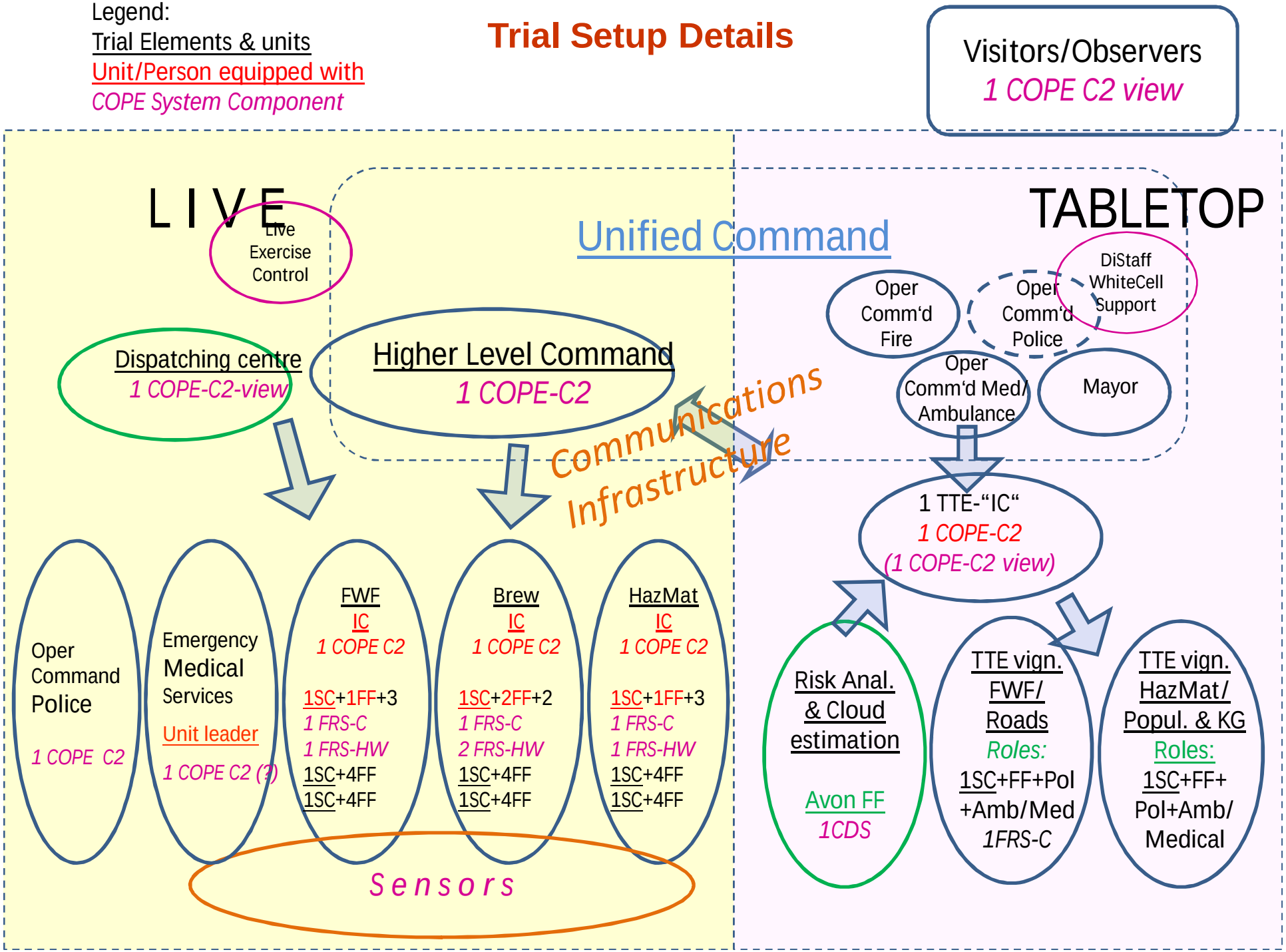
- A real emergency exercising training range
- 3 preceding test exercises
- >4 months planning lead time
- A very complex scenario close to real
- More than 80 participants
  - First responders 38
  - Visitors/ players 14
  - Team members 19
  - Supporting staff 15
- About 40 major technical components installed
- 3 days duration: 22/23/24 Sept. 2010
  - Instructions, briefings, rehearsal
  - The exercise scenario: ~3 hours real time
  - Debriefings, feedback and wrap up
- Multi-step evaluation

# Situation Map

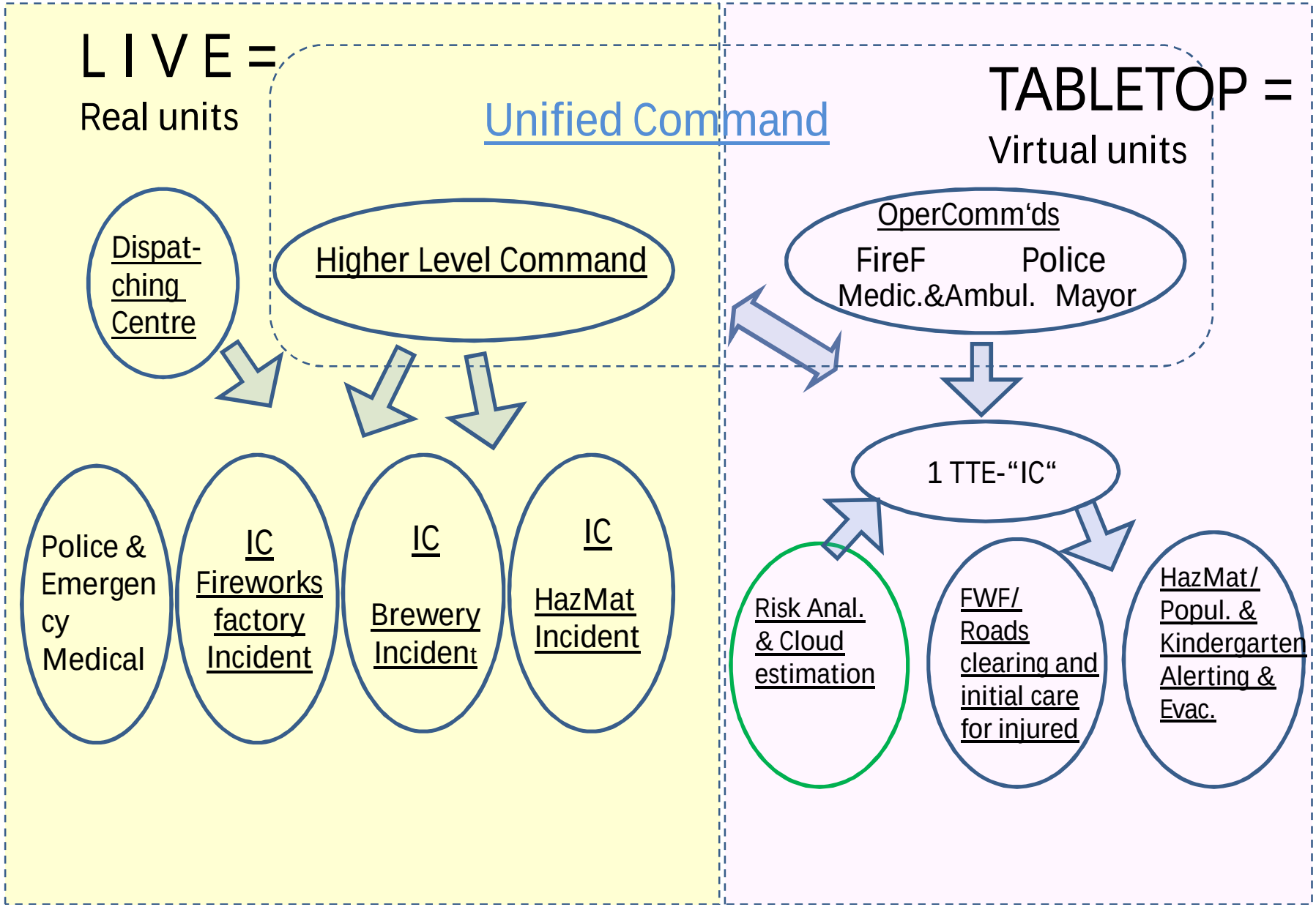


# Why a complex Scenario?




Legend:
Trial Elements & units
Unit/Person equipped with
COPE System Component
Trial Setup Details
Visitors/Observers
1 COPE C2 view
LIVE
TABLETOP
Live Exercise Control
Unified Command
Dispatching centre
1 COPE-C2-view
Higher Level Command
1 COPE-C2
Communications Infrastructure
Oper Comm'd Fire
Oper Comm'd Police
DiStaff WhiteCell Support
Oper Comm'd Med/ Ambulance
Mayor
1 TTE-"IC"
1 COPE-C2
(1 COPE-C2 view)
Oper Command Police
1 COPE C2
Emergency Medical Services
Unit leader
1 COPE C2 (?)
FWF
IC
1 COPE C2
1SC+1FF+3
1 FRS-C
1 FRS-HW
1SC+4FF
1SC+4FF
Brew
IC
1 COPE C2
1SC+2FF+2
1 FRS-C
2 FRS-HW
1SC+4FF
1SC+4FF
HazMat
IC
1 COPE C2
1SC+1FF+3
1 FRS-C
1 FRS-HW
1SC+4FF
1SC+4FF
Risk Anal. & Cloud estimation
Avon FF
1CDS
TTE vign. FWF/ Roads
Roles:
1SC+FF+Pol +Amb/Med
1FRS-C
TTE vign. HazMat/ Popul. & KG
Roles:
1SC+FF+ Pol+Amb/ Medical
Sensors

# COPE Trial Setup

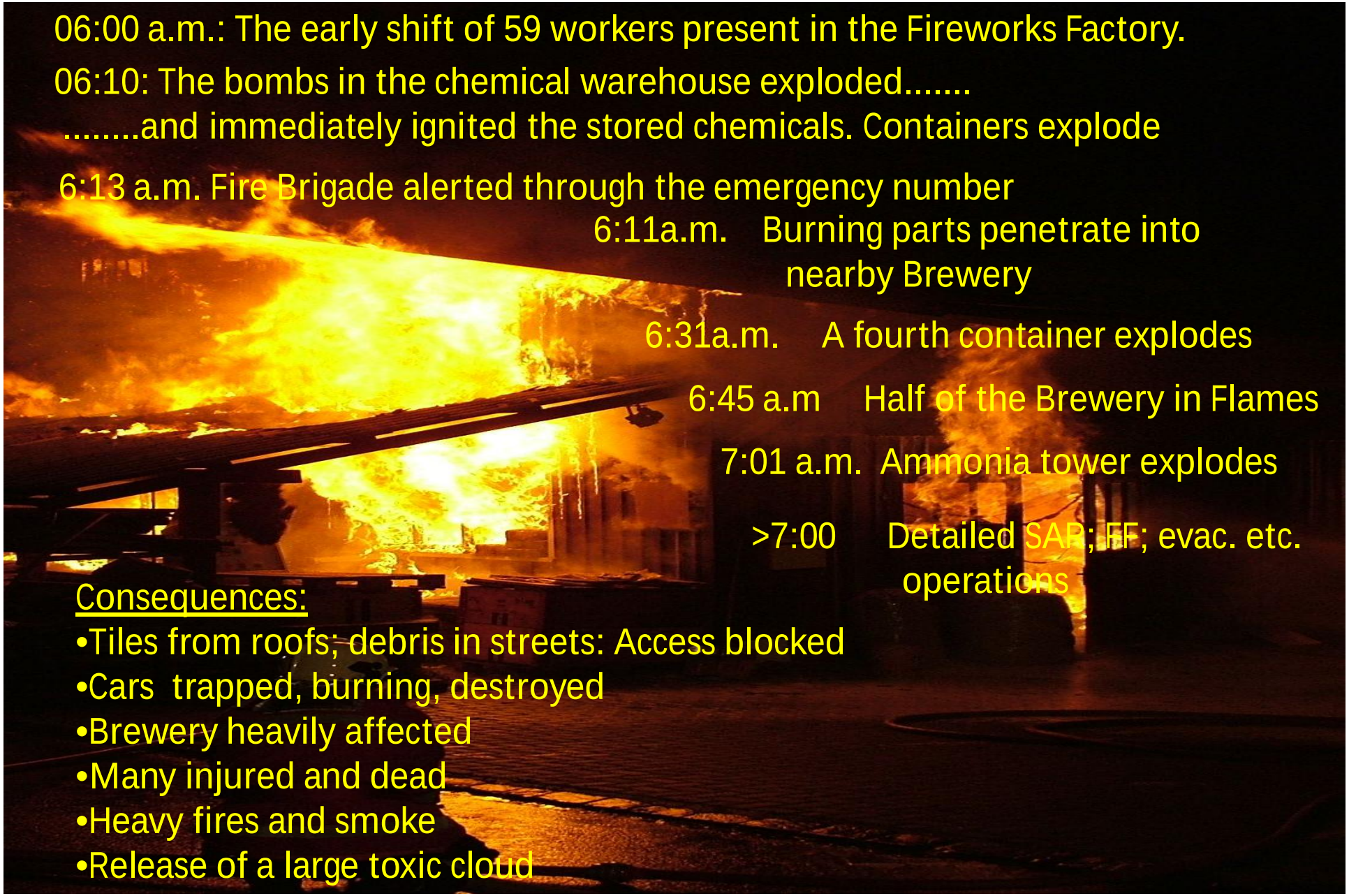


COPE

## Exercise Roles

- Dispatching centre
- Unified Command (virtual)
- Incident Commands
- C2/CDS support: CSO&RA
- Sector Commanders
- Fire Fighter Command
- Ambulance Command
- Police Command
- Regional Politician / Mayor

# The Disaster Scenario



06:00 a.m.: The early shift of 59 workers present in the Fireworks Factory.

06:10: The bombs in the chemical warehouse exploded.....
.....and immediately ignited the stored chemicals. Containers explode

6:13 a.m. Fire Brigade alerted through the emergency number

6:11a.m. Burning parts penetrate into nearby Brewery

6:31a.m. A fourth container explodes

6:45 a.m Half of the Brewery in Flames

7:01 a.m. Ammonia tower explodes

>7:00 Detailed SAR; FF; evac. etc. operations

Consequences:

- Tiles from roofs; debris in streets: Access blocked
- Cars trapped, burning, destroyed
- Brewery heavily affected
- Many injured and dead
- Heavy fires and smoke
- Release of a large toxic cloud

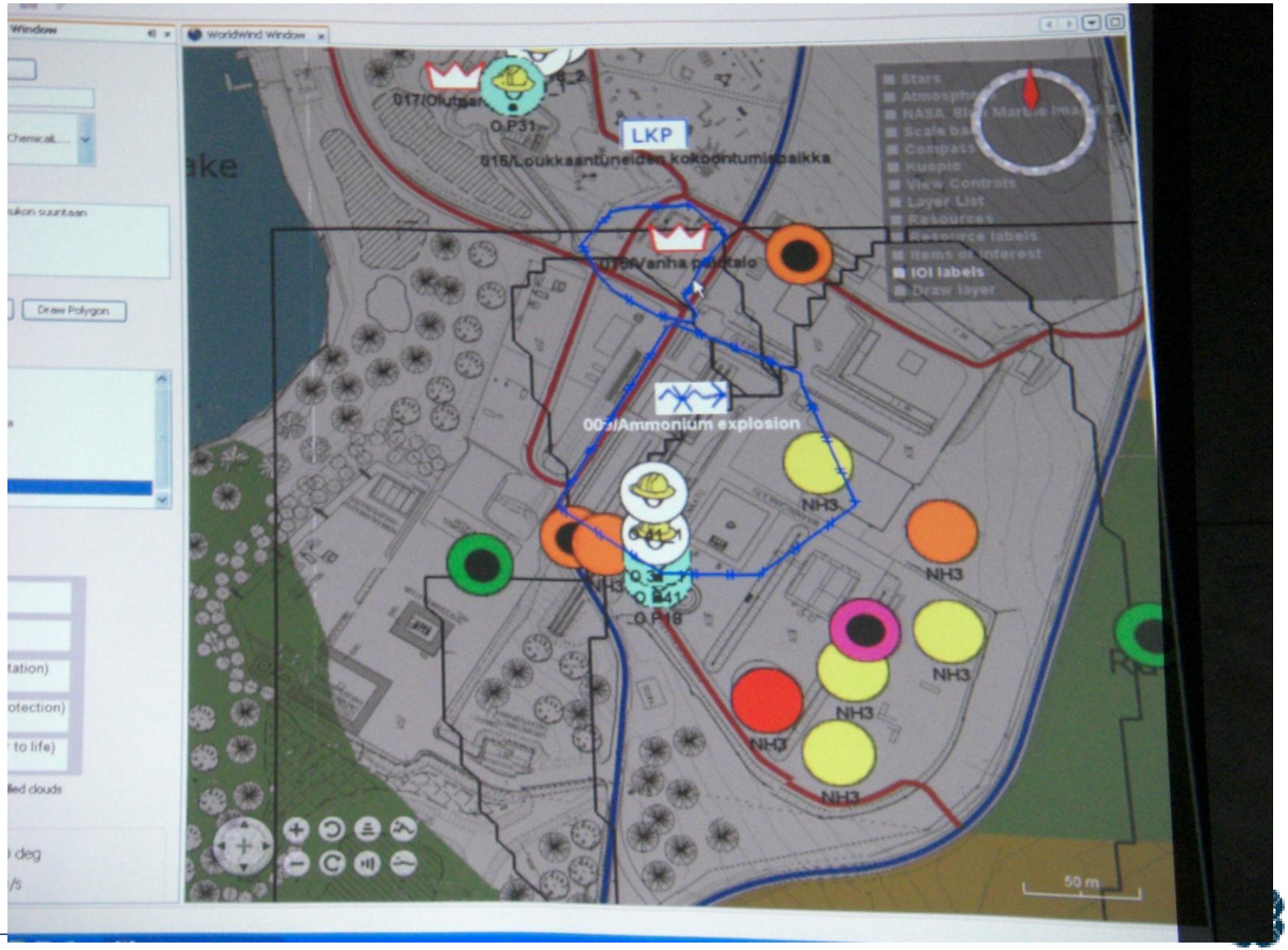
# Main Course of Actions

COPE

# Reality


# Reality

# The Common Operational Picture builds up

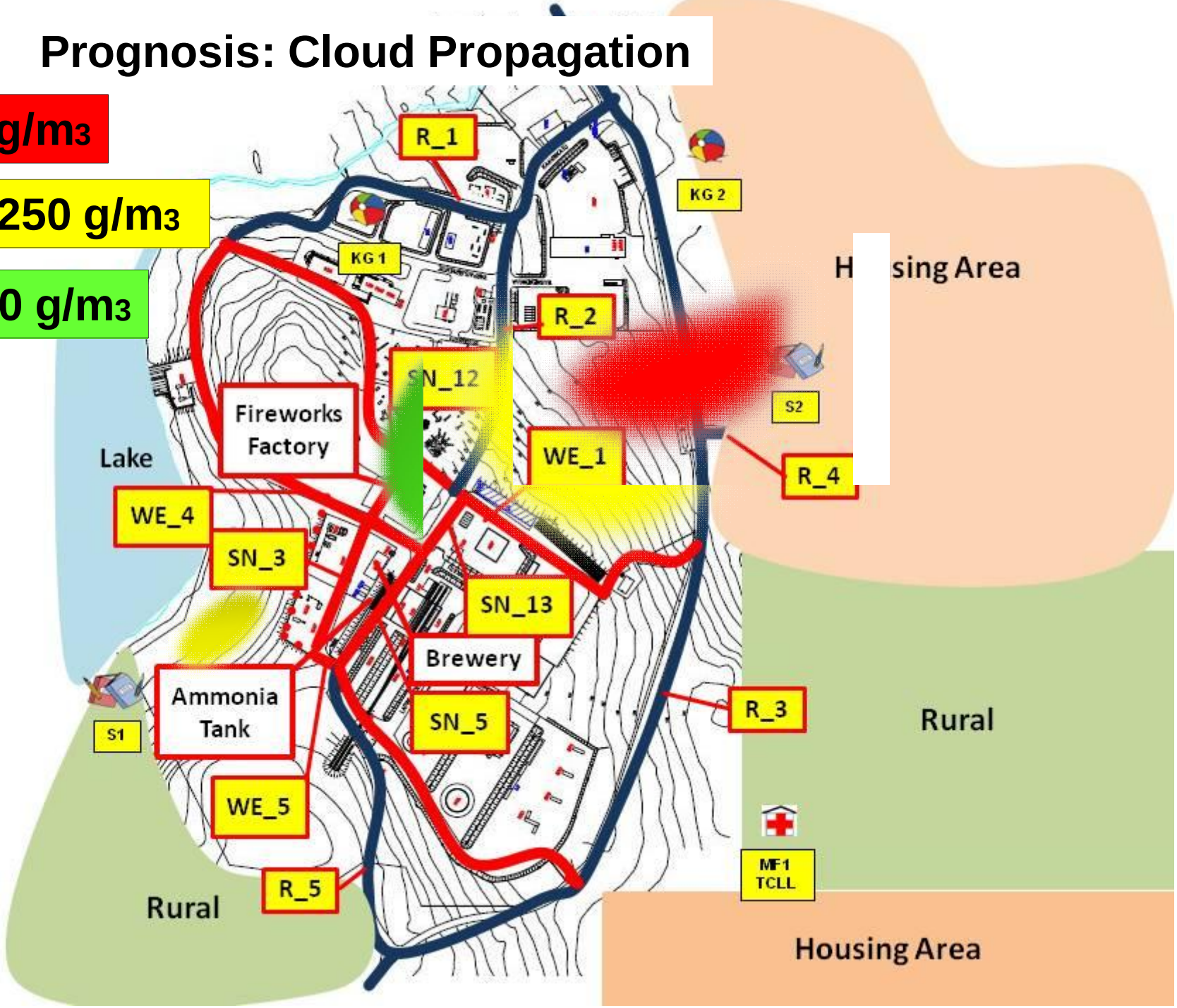


# T+17 Prognosis: Cloud Propagation

250<x g/m3

100<x<250 g/m3

0<x<100 g/m3



COPE

## The Evaluation of Components and of the whole System

1. **Did it work?**
2. **How did it support the tasks?**
3. **How was it accepted & evaluated by the user?**
4. **Could results be measured?**
5. **How was the quality enhanced of the COP, the Common Operational Picture**
6. **Were the project goals achieved ?**
   - **Scientifically**
   - **Technically**
   - **Operationally**
   - **Budgetary**

# The overall results of the trial

COPE

| Object | Performance | Limitations |
|---|---|---|
| The overall COPE System | Performance hardly measurable; all components contributed to the COP as planned | Would need repeated training and exercising;<br>Some local/temporary failures did not jeopardize overall success |
| The COPE Command & Control | Worked as planned; TSO & GIS very helpful | Overall integration performance to be better emphasized |
| The COPE Decision Support | Worked with FR familiar with procedures | should become an integrated function also for higher level C2 |
| The First Responder System-Control | Worked correctly and to requirements | Some partial outage |
| The Human Wearables | Worked and sometimes disturbed; | To be integrated in human Wear |
| The Sensors/ SIPs | Worked to design | Customer adaptation if required |
| The Communication | Worked as designed | Had some minor interference and overload problems |

# The main conclusions

COPE

- The system is a technology demonstrator, not a turnkey operational product
- All components worked but all showed some limitations too
- The overall goal of the project was achieved
- The technical integration effort was underestimated
- The operational integration and training requirements, too
- Language and procedures of the host organization are different from those of other partners
- The size and complexity of the system and of the trial were at the edge of feasibility
- FRs were confronted with a huge amount of new technologies ...

COPE

# Thank you !

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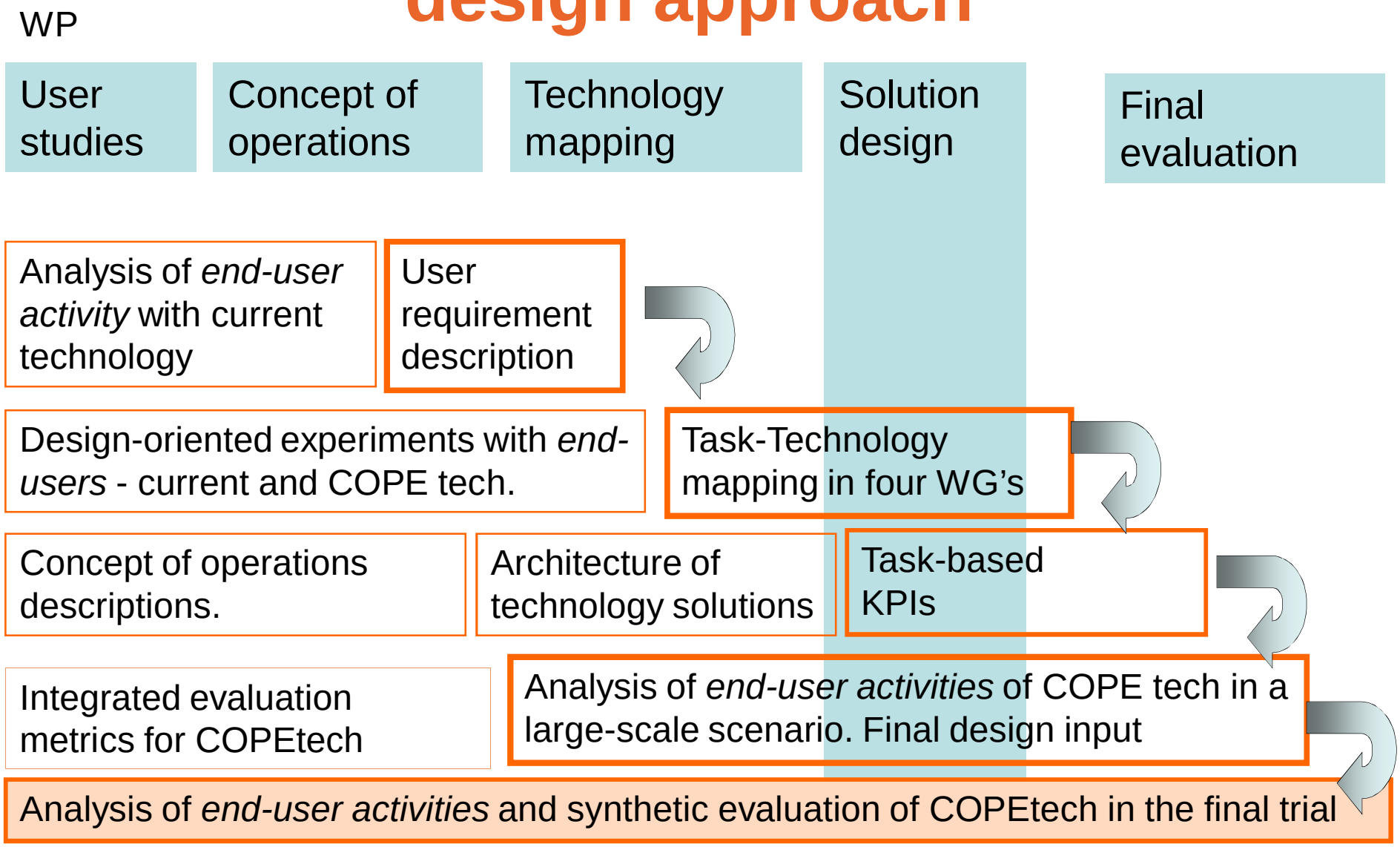
www.cess-net.eu
http://cope.vtt.fi

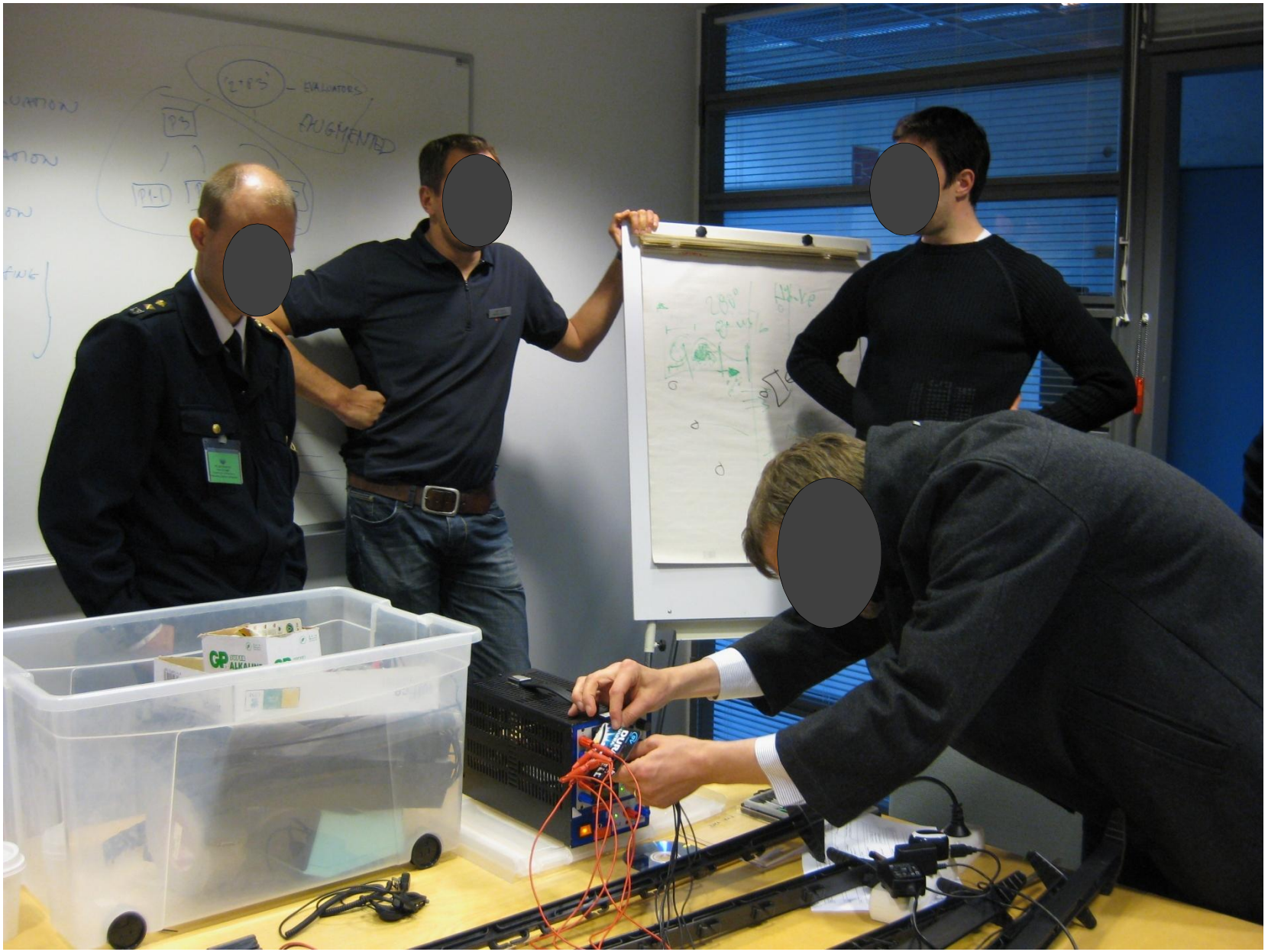
# Human Factors in the COPE project

**Prof. Leena Norros VTT**
**HF Coordinator of the COPE project**

VTT, Technical Research Centre of Finland
BAE Systems (United Kingdom)
TCD, Trinity College Dublin (Ireland)
Emergency Services College (Finland)
http://cope.vtt.fi

# COPE-project followed a usage-centred design approach





COPE technology developers, end users and HF experts constructing the first version of the WSN

# Human Factors (HF) data collection in the real-life trials


TRAINING OF PARTICIPANTS
T+17 Prognosis: Cloud Propagation
100<c<250 g/ms
0<c<100 g/ms
Housing Area
Rural


TESTING THE USABILITY FEATURES OF SINGULAR TECHNOLOGIES


OBSERVING AND VIDEOTAPING COMPREHENSIVE ON-GOING ACTIVITIES
CANIA
PELASTUSOPISTO
360

# EXPERT EVALUATIONS OF PERFORMANCE


DEBRIEFING DISCUSSIONS

# HF analysis of ER activity and of the forming of Common Operational Picture (COP)

- Forming of COP is one of the cognitive demands ER work. It takes place in the context of accomplishing well rehearsed tasks.

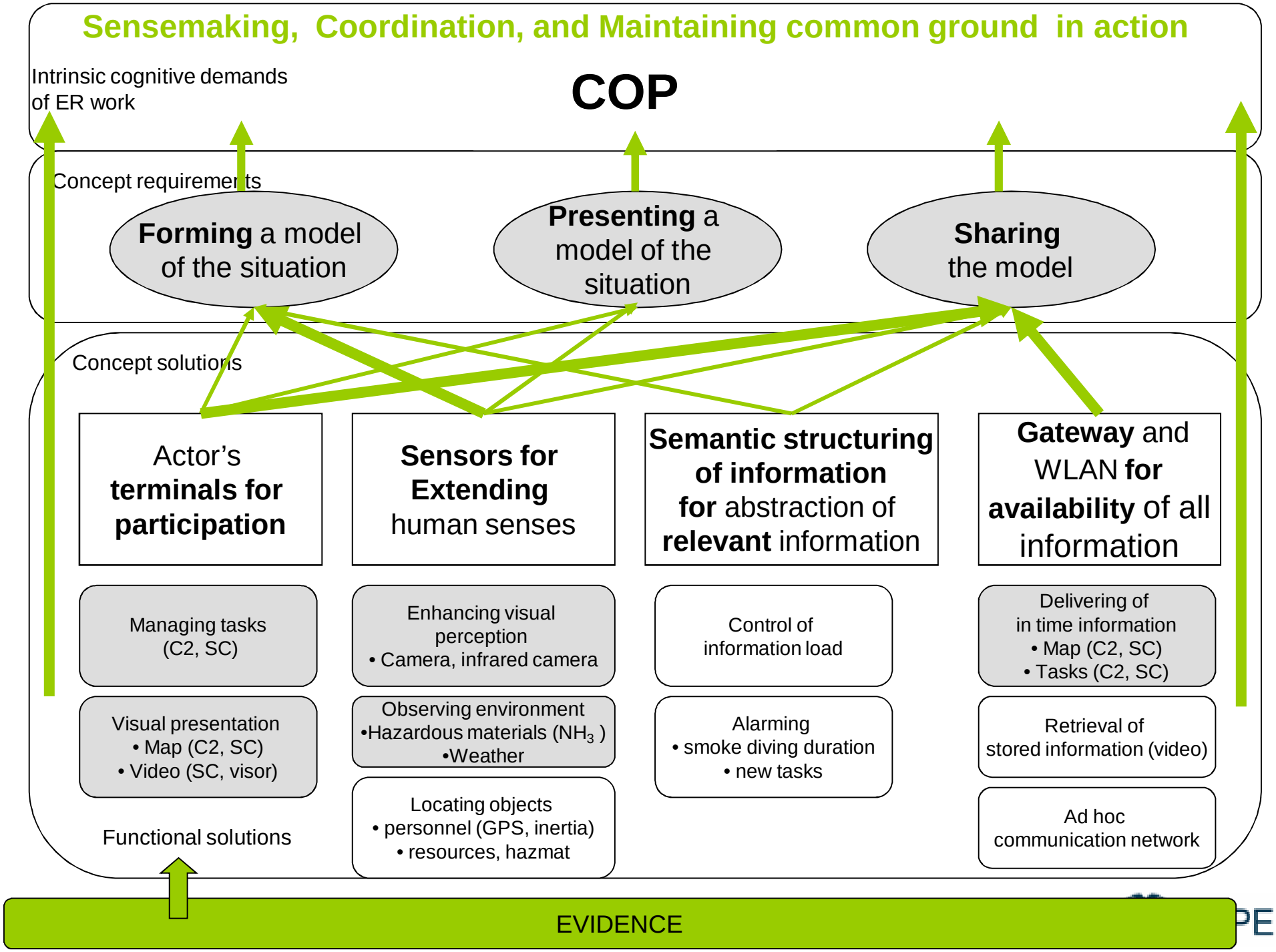
- COP is the emergency responders' on-line conception of the emergency situation which is as coherent as possible, and is supported by artefacts.

- ER activity and forming of COP was studied in realistic exercises by

  - describing the course of actions and decision making
  - defining successfulness of task performance
  - analysing communication processes during the activity
  - inquiring user experience concerning used technologies

# HF evaluation of the COPE technology concept

- Verification
  - Focus on the functionality and usability of singular technologies in different tasks against the requirements
  - Task completion and user experience (UX)
- Validation
  - Focus on the potential of the COPE concept in supporting COP
  - **Usability Case** method:
    - Claims concerning the innovative elements of COPE concept and their support for COP
    - Evidence of different exercises to test the fulfilment of the claims
    - Provides a possibility to synthesize data, and derive general results from successive design studies


Sensemaking, Coordination, and Maintaining common ground in action
Intrinsic cognitive demands of ER work
COP
Concept requirements
Forming a model of the situation
Presenting a model of the situation
Sharing the model
Concept solutions
Actor's terminals for participation
Sensors for Extending human senses
Semantic structuring of information for abstraction of relevant information
Gateway and WLAN for availability of all information
Managing tasks (C2, SC)
Visual presentation • Map (C2, SC) • Video (SC, visor)
Enhancing visual perception • Camera, infrared camera
Observing environment •Hazardous materials ($NH_3$) •Weather
Locating objects • personnel (GPS, inertia) • resources, hazmat
Control of information load
Alarming • smoke diving duration • new tasks
Delivering of in time information • Map (C2, SC) • Tasks (C2, SC)
Retrieval of stored information (video)
Ad hoc communication network
Functional solutions
EVIDENCE

# Conclusions

- Potential of the COPE concept was shown in the project via a systematic evaluation process
- Gaining actual added value from COPE technologies in the future requires still more HF effort on
  - semantic structuring of information; forming of efficient ontologies
  - design of integrated human-technology communication systems
- Technology changes demands of work
  - ICT enables new concepts of operations in emergency response
  - new competencies need to be learned


# Thank You

VTT, Technical Research Centre of Finland
BAE Systems (United Kingdom)
BAE Systems C-ITS (Sweden)
TCD, Trinity College Dublin (Ireland)
UTI Group (Romania)
GMV-Skysoft (Portugal)
CESS, Centre for European Security Strategies (Germany)
IGSU, General Inspectorate for Emergency Situations (Romania) ESC, Emergency Services College (Finland)

http://cope.vtt.fi

Last update on 26 November 2010

# PSCE Forum Conference Attendance List 30 Nov-1 Dec 2010 - Amsterdam

***Sorted by name***

| Nbr | Last Name | First Name | Organisation / Company | Country | 30-nov-10 | 1 Dec 2010 | |
|---|---|---|---|---|---|---|---|
| 1 | ARIAS-BUFFARD | Delphine | CEDRALIS | France | x | x | |
| 2 | BAVLI | Eyal | CISCO | France | x | x | |
| 3 | BIKAR | Patrick | CISCO | Belgium | x | x | |
| 4 | BLAHA | Manfred | Ministry of Interior<br>PSCE Treasurer | Austria | x | x | |
| 5 | BONNAMOUR | Marie-Christine | PSCE Secretariat | Belgium | x | x | |
| 6 | BORGSTRÖM | Robert | Ericsson | Sweden | x | x | |
| 7 | BOUWERS | Egbert | ROHILL | The Netherlands | x | NO | |
| 8 | BOVIM | Egil | KoKom<br>Relation & Communication Officer PSCE | Norway | x | x | |
| 9 | BROUWER | Frank | WMC | The Netherlands | ? | x | |
| 10 | CHATER-LEA | David | Motorola | UK | x | x | |
| 11 | CLEMONS | Peter | TELTRONIC S.A.U. | Spain | x | x | |
| 12 | DAVALO | Eric | EADS - President PSCE | France | x | x | |
| 13 | DAVIER | Thierry | Federal Public Service Interior | Belgium | x | x | |
| 14 | DELVOY | Guido | CISCO | Belgium | x | x | |
| 15 | DOERRE | Oliver | Frequentis | Germany | x | x | |
| 16 | DYMOWSKI | Wojciech | ITTI | Poland | x | x | |
| 17 | ELLAW | Hassan | CISCO | Saudi Arabia | x | x | |
| 18 | FERRÚS | Ramon | Universitat Politècnica de Catalunya (UPC) | Spain | x | x | |
| 19 | FORSLING | Johan | BAE Systems C-ITS AB | Sweden | x | NO | COPE |
| 20 | GALANTE | Susy | CISCO | Italy | x | x | |
| 21 | GOLLNICK | Dietmar | e*message | Germany | x | x | |
| 22 | GORRELL | John | Interpol | France | x | x | |
| 23 | GUSTAVSEN | Morten | Unified Messaging Systems | Norway | x | x | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | HAMALAINEN | Jari | VTT | Finland | x | NO | COPE |
| 25 | HERNANDEZ | Felipe Fernandez | BOSCH | Spain | NO | x | |
| 26 | HEYDER | Joern-Uwe | DG INFSO | EC | x | | |
| 27 | HOURTE | Benjamin | HITEC Luxembourg | Luxembourg | x | x | |
| 28 | HUTTER | Reinhard | CESS GmbH | Germany | x | x | COPE |
| 29 | ILSE | Hartmut | e*message | Germany | x | x | |
| 30 | IMBERT | Luc | CISCO | France | x | x | |
| 31 | IMMONEN | Aapo | Emergency Services College Finland (ESC) | Finland | x | NO | COPE |
| 32 | JACQUARD | Claude | Police Emergency Centre | Belgium | x | x | |
| 33 | KING | Paul | CISCO | | x | ? | |
| 34 | KNEZIC | Snjezana | TIEMS (University of Split) | Croatia | x | x | |
| 35 | LEVI | Yitakh | eVigilo Ltd<br>Israeli Home Front Command (IDF) | Israel | x | x | |
| 36 | LINKE | Harold | HITEC Luxembourg | Luxembourg | x | x | |
| 37 | LODDER | Jaap | Ministry for Security & Justice | The Netherlands | NO | x | |
| 38 | LÖNNROTH | Arto | Ministry of Interior | Finland | x | NO | |
| 39 | MÄÄTTÄ | Kalle | VTT | Finland | x | NO | COPE |
| 40 | MACHADO | Gary | European Emergency Number Association<br>EENA112 | Belgium | x | x | |
| 41 | MESTRE | Alex | Retevisión I, S.A. | Spain | x | NO | |
| 42 | MOKRANI | Hervé | EADS | France | x | x | |
| 43 | NORMAN | Jerry | AVAYA | The Netherlands | x | x | |
| 44 | NORROS | Leena | VTT | Finland | x | NO | COPE |
| 45 | NOWACK | Wolfgang | Federal Agency for Digital Radio of Security Authorities and Organizations (BDBOS) | Germany | x | x | |
| 46 | OLSSON | Lars | Swedish Civil Contingencies Agency - MSB | Sweden | x | x | |
| 47 | PALFI | Mihai | UTI SYSTEMS SA | Romania | x | x | COPE |
| 48 | PARRAGA | Cristina | DLR-German Aerospace Center | Germany | x | x | |
| 49 | PERSSON | Mats T | National Police Board | Sweden | x | x | |
| 50 | PETCU | Viorel | UTI SYSTEMS SA | Romania | x | x | COPE |
| 51 | PETERSEN | George | Ministry of Economic Affairs, Agriculture and Innovation | The Netherlands | x | x | |
| 52 | PORGES | Martin | AVAYA | Germany | x | x | |
| 53 | PORTNOI | Yoni | eVigilo Ltd | Israel | x | x | |
| 54 | RAJAMÄKI | Jyri | Laurea University of Applied Sciences | Finland | x | x | |
| 55 | RANTANEN | Hannu | Emergency Services College | Finland | x | x | COPE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 56 | READHEAD | Ian | Association of Chief Police Officers | UK | x | x | |
| 57 | RING | Steffen | Motorola | Denmark | x | x | |
| 58 | SALLENT | Oriol | Universitat Politècnica de Catalunya (UPC) | Spain | x | x | |
| 59 | SANDERS | Peter | one2many | The Netherlands | NO | x | |
| 60 | SAVIOJA | Paula | VTT | Finland | x | NO | COPE |
| 61 | SCHERER | Isabell | HITEC Luxembourg | Luxembourg | x | x | |
| 62 | SCHOOF | Dick | Ministry of Interior | The Netherlands | x | NO | |
| 63 | SCHWABACH | Helmut | AIT Austrian Institute of Technology | Austria | x | x | |
| 64 | SIMON | Carlo | Government Communication Centre | Luxembourg | x | x | |
| 65 | STEENBAKKERS | Willy | Ministry for Security and Justice-NL | The Netherlands | NO | x | |
| 66 | TEICHMANN | Friedrich | MoD | Austria | x | x | |
| 67 | van den Ende | Bram | TNO | The Netherlands | NO | x | |
| 68 | VERHOEF | Esmi | WMC | The Netherlands | ? | ? | |
| 69 | WALTER | Bruno | CellCast Technologies EMEA | Austria | x | x | |
| 70 | van Loo | Reinard | FREQUENTIS | Austria | x | x | |
| 71 | Van Merkom | Simon | NATO IRCSG-Communications | The Netherlands | NO | x | |
| 72 | WEETS | Guy | PSCE Board - Research Committee | Luxembourg | x | x | |
| 73 | WEISS | Guy | eVigilo Ltd | Israel | x | x | |
| 74 | WELSH | Nick | Cabinet Office | UK | x | x | |
| 75 | WILKINS | Mark | BAE Systems | UK | x | NO | COPE |
| 76 | YEADON | Kate | EPT Luxembourg | Luxembourg | x | x | |

# PSCE Press Release

## A success for the PSCE Amsterdam Conference

On 30 November and 1 December 2010, **PSCE** successfully organised another of its high-level biannual conferences traditionally covering the latest issues encompassing the world of public safety communications.

Held in CISCO Systems premises in Amsterdam (the Netherlands), the conference brought together over 80 participants including top-level policymakers, academic researchers, industrial experts and other interested stakeholders who discussed the new developments in this domain. In particular, they had an opportunity to learn about various aspects of Critical Information Protection and Public Warning Policy and broadened their knowledge of existing projects in public safety communications. A special attention was also paid to the allocation of radio spectrum for the civil protection authorities.

In addition to the outstanding presentations given by the key-note speakers, the conference served as a working platform enabling the whole **PSCE** structure to report on and pursue with its respective work. The programme of the conference therefore comprised also the Industry, Research and Users Committee meetings as well as the Board and General Assembly meetings. The establishment of the OSSAF (Open Safety & Security Architecture Framework) Working Group was unanimously approved along with the White Paper entitled "**Enterprise Architecture as the Foundation for Agile Public Safety & Security.** "

For the first time, the **PSCE** Forum Conference successfully hosted also an external dissemination event on Common Operational Picture Exploitation (COPE) Project. The objective of this EU funded project is to create technological solutions which enable improved emergency management by better command and control performance and reliability of technical support. Booth presenting the COPE technology developments was available during the conference. More information about the project is available at http://cope.vtt.fi/ .

Throughout the conference, unique and innovative ideas were generated and new contacts were established. The overall results of the event lay down promising basis for future discussions.

A number of conference materials including the programme, list of participants and all the presentations (including General Assembly documents) will be made available soon to all the participants. For more information, please contact **PSCE** Secretariat at secretariat@psc-europe.eu.

***Forum for Public Safety Communication Europe is to foster, by consensus building, excellence in the development and use of public safety communications and information management systems as well as to improve the provision of public safety services and the safety of the citizens of Europe and the rest of the world. The PSCE provides a common platform for researchers, industry and users to meet and network, learn about technologies used for public safety and influence policy makers at European level.***

**PSCE –Public Safety Communication Europe**
**Avenue Plasky 22 – B-1030 Brussels / Belgium - Tel.: + 32 2 738 07 63 / Fax: + 32 2 738 07 64 – secretariat@psc-europe.eu**