

Workshop 5, Cologne and Bonn  
(Germany) : organization and  
communication  
15<sup>th</sup> – 17<sup>th</sup> March 2006



Workshop 5 was held on the 15<sup>th</sup>, 16<sup>th</sup> and 17<sup>th</sup> March 2006 in Cologne and Bonn, Germany. The topic of this workshop was **organization and communication**.

This workshop was jointly organized by the City of Cologne and Fraunhofer FIT. It was hosted at the newly built fire brigade training centre of the City of Cologne and the Bonn-Aachen International Centre for Information Technology in Bonn (b-it).

The first session dealt with the different levels of organization as they appear in decentralized systems as well as processes that are supported by some centralized services. Central components and their impact on the overall performance of the entire system were presented in this session.

The second session focussed on best practices for organizational structures as well as the utilization of technical services and relief operations on a voluntary basis. The latter issue is of particular interest for Germany, since the number of voluntary fire fighters is more than six times the number of full-time fire fighters.

This session included further presentations of best practices for specific risks and referred to the lessons learnt from specific incidents.

The third session addressed new technologies and future perspectives. The range of topics included the safety of communication and computer networks, new devices for communication to the public, communication backbones and process management approaches for the formal analysis of risk management processes.

In this issue, you will find a summary of some of the presentations. More details appear on the website <http://www.setric.org>.

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### Levels of organization in European countries

#### Organizational and communication requirements of the City of Cologne within a decentralized system

Stephan Neuhoff, Chief, Fire Brigade of  
the City of Cologne

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This presentation dealt with the organization of the Cologne Fire Brigade, within the context of the German decentralized system.

One of the main roles of the Fire Brigade in the event of a disaster is to manage the crisis and to coordinate its forces. A crisis room in the Fire Brigade premises is allocated to this task.

In Germany, each city has its own crisis management organization and carries out its own crisis plan. This decentralized organization presents some obvious advantages for cities, but there are also several drawbacks.

One of the disadvantages is the possible lack of coordination between cities if a disaster occurs over a territory covering several of them.



At present, the coordination between the cities is only based on the good will of authorities and on the relationships between neighbouring cities.



*Crisis room in Cologne*

This could be improved if the central government :

- organized the cooperation between the fire fighters of different cities,
- drew up a masterplan or guidelines to help the cities work out their crisis plan.

Similarly, there is also a need for coordination between the hospitals of neighbouring cities, for the medical care of injured people and their allocation to various hospitals, in the event of a major accident.

Another wish highlighted in this presentation is to secure the communication system, in order to ensure that it is not disrupted by the disaster (for example positioning computers above the highest known water level in the event of a flood).

## **The concept of risk management within globalisation**

### ***Based on global sustainable responsibility***

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The World Watch Institute (2005) lists three challenges for the world's community : threats and risks (security), North-South relations, and the challenges of sustainable development.

Before discussing the challenges faced in terms of Risk Management, it is first necessary to establish concepts, elements and preconditions.

Examples : How do we differentiate risk management and crisis management ? Do we use a classic (objective) or a Bayesian model as the starting point or something else ?

When talking about risks at a societal level, do we include the political world and the business world in addition to civil society ?

Solutions to technical, economical and structural issues must be integrated on the basis of open standards, which meet minimum requirements !

Basically we must consider the emergency circle as a whole. However we also know that to some degree risks are social and political inventions. Examples can be seen through issues such as social disintegration, poverty, hunger, epidemics, and migration. Solving such "man-made" problems entails transforming the risk, through deregulation or by enabling the market-forces to take over. It is essential to identify vulnerability in critical infrastructure and to introduce new technology and production models.

The boundaries between risk-related problems are becoming increasingly unclear : external and internal security, technological and societal reasons/consequences, the scope and area of responsibility. At the same time societal developments seem to be moving towards complexity and interdependence, ambiguity and uncertainty.

This contributes towards shying away from debate and leaving matters to the experts. We often underestimate the element of uncertainty and tend to simplify risks into measurable parameters that are politically acceptable.

Essential elements in a proactive method include : flexibility in crisis management, giving individuals a sense of responsibility, increasing public awareness and participation, focusing on processes during a crisis, and understanding that you cannot prevent risks purely through "designing".

Facts and conclusions : within the context of globalisation, priorities must be based on global sustainable responsibility. It is time to consider whether civil protection is - in the context of the EU - solely a matter of internal national priorities.

It is also time to connect the vertical top-down model with a horizon-oriented model, based on a municipal and community model.



## Commercial versus public services – Danish perspective

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Falck is a Nordic-based organization that provides assistance, rescue, healthcare and training to the public sector, private members, business subscribers, insurance companies, pension companies and international clients. The company ambition over the next few years is to develop Falck into a pan-European organisation, and to achieve global status in certain sectors.

Since 1906 Falck has become a cornerstone institution in Denmark, to which the Danes entrust vital tasks such as ambulance services, fire fighting and rescue for people and animals. Almost nine out of ten ambulances in Denmark carry the Falck logo, and Falck carries out fire fighting services for the majority of Danish local councils. Falck carries out these services on the basis of contracts with public authorities, private subscribers, insurance companies and business clients. The same infrastructure of vehicles, stations, emergency operations centres, health clinics and the suchlike are used for both private and public clients. This strong integration of the public and private rescue service has provided major qualitative and financial benefits for Danish society.

Since the beginning of the 1990s Falck has successfully crossed borders into other countries. In 1990, Falck only operated in Denmark. In 2005, more than 25% of our activities are outside Denmark. As an example : with a strong focus on Scandinavia, the Benelux countries and Eastern Europe, Falck is currently the largest ambulance service in the European

Union and the only organization that has ambulances in several different countries.

Falck is, however, much more than the public sector emergency services that we are responsible for in several countries. Falck also takes care of other public tasks such as sickness transport, rehabilitation of public sector hospital patients and operation of auxiliary aid centres as well as many service tasks for the police and road authorities. Falck also provides a long list of health, security and roadside services as well as other forms of assistance to some 1.6 million private citizens and businesses in Denmark, Norway, Sweden and Poland.

On the world market for rescue and security courses for the offshore, maritime and other dangerous sectors in particular, Falck is the strongest actor of all. Activities are concentrated on risk management, the safety training of client employees as well as preparing them for self-help and the assistance of others in the event of an accident.

All of Falck's activities are closely linked to the mission that the company's founder Sophus Falck formulated in 1906 – to prevent accidents, emergencies and illness as well as rescuing people in distress and helping those who are ill and relieving the after-effects of sickness and distress.

A century later Falck still has the same mission and as such have the vision of being Europe's leading rescue and assistance organization, with major tasks for the public and private sector and adapted to rules and conditions of individual countries.

Falck is a secure co-operating partner to whom the public and private sectors can confidently entrust prevention, catastrophe assistance, accidents, emergencies and help to carry on.

You can always count on Falck when it comes to Assistance, Emergency, Health and Training.



## Best practices and lessons learnt for design and organizational structures

### Federal structures in Germany and their impact on organizational processes

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This presentation deals with the organization of crisis management in a federal system, involving the central government and local authorities.

In Germany, the federal states are responsible for protection against catastrophes such as floods, terrorism, etc. They coordinate their own authorities and those of the cities.

Central government only coordinates forces when the catastrophe covers several federal states, or in the event of war.

At a local level, each city has its own fire brigade. The majority of them are voluntary fire brigades; only a few of them are professional fire brigades. This combination of professional and voluntary fire fighters is characteristic of German organization.



When several nearby cities are involved, it is this circle that is responsible for crisis management.

However, when there is a major disaster, covering the territory of several cities, and states, the incident may be managed at several different levels. As said above, it is then the task of the central government to organize crisis management between the different cities.



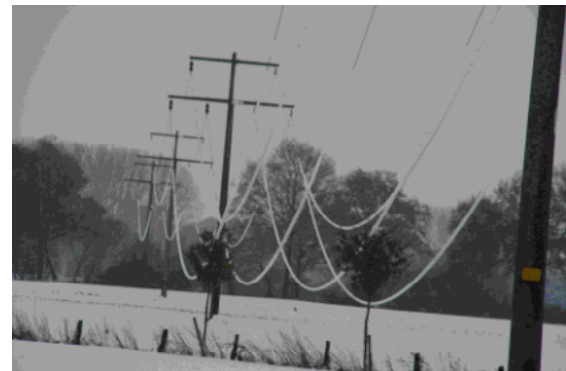
## Lessons learnt from the integration of task forces for large-scale disasters : example of a power-cut lasting several days

Martin Sommer, Head of task force,  
County of Steinfurt

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At the end of the last year an extreme weather situation in the north of the Münsterland brought forth the most extensive assignment of forces of danger defence in the history of the district of Kreis Steinfurt.

Exceptional strong snowfalls combined with strong wind led to very thick frost and snow crusts around the power supply lines. About 50 power supply lines didn't withstand and broke.



The consequence was the most extensive and large area electrical power outage in the European after war history. Up to 250,000 people in the northern Münsterland were

separated from the public power supply system for several days.

In addition to this unfolding situation the forces of danger defence had to fight against several strong situations in road traffic. Thousands of motorists were transixed in traffic jams with lengths of a few miles on several motorways.

The operation controller and the task force organized the buildup of a comprehensive power supply system by emergency power for about several days and organized the supply and the support of those motorists, who were transixed. About more than 3000 field helpers were applied.

The crisis management of the district of Steinfurt for the coverage of these comprehensive situations was extremely effective. This success has different reasons.

The decision was essential to call out red alert very early. Thereby we had the legal possibility to demand the support of the Bundeswehr, so that the task force could control the situation at any time.

Furthermore the operation controller and the leader of the task force decided to pool together both forces though the directive of the Innenministerium NRW. The determining advantage of this structure was the efficient utilisation of personal resources. Defined functions did not have to be occupied twice, so that we could assure the operation readiness for one week day and night in a three shift operation.

All of the concerned helpers have worked together with high engagement and high professionalism. Working in the task force was characterised by a very good personal teamwork without problems in communication.



Very important were also the regular practices of task force and operation controller in the run-

up time. It has shown, that the personal knowledge of the members of the task force is the "sine qua non" for a successful management of a crisis.

## Lessons learnt from the containment of avian influenza (bird flu) with cross-border coordination

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The county of Viersen is located in NRW, not far from the border with the Netherlands.

The foot-and-mouth-disease first broke out in Great Britain on February 20<sup>th</sup>, 2001. The disease's progress left its marks. Consequently, the County of Viersen prepared for the threat of the foot-and-mouth-disease: an alerting concept was drafted, alert phases were defined, and checklists were created for control stations.

The Fire Department also prepared for the threat of the foot-and-mouth-disease: disinfection sluices were built and set-up, arrangements were made with the German Federal Agency for Technical Relief (THW) and with the veterinary department.



*Disinfection sluices*

The county's administrative centre was created in the fire station in Viersen.

Since March 2003, the Netherlands were hit by Avian Influenza. 30 million animals had to be killed, the equivalent of a third of the whole poultry population of the Netherlands. Immediate damage was about 280 mio €.



Consequential damage included, the amount reached around 500 mio €.

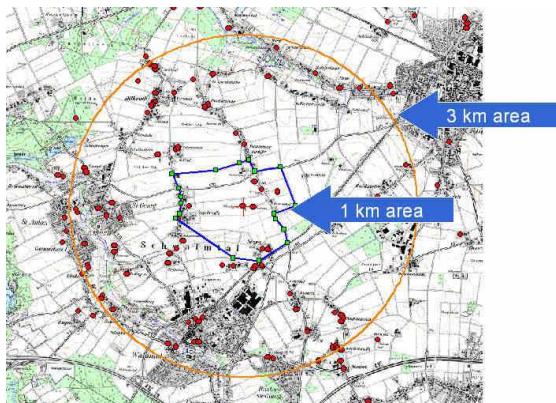
Mid April 2003, the disease broke out near the Dutch border. On April 14th, the county of Viersen's control station was notified of the avian influenza by the Dutch fire departments. On April 15th, the towns closest to the border, Brüggén and Niederkrüchten, were declared restricted areas.

All poultry in the Dutch "buffer area" was killed.



On May 7th, 2003, there was a veterinary examination of the avian population. This led to the activation of the crisis management group on May 8<sup>th</sup>.

The crisis team was composed of: a district veterinary officer, the local authority's veterinary board, a press officer, a town council representative, a representative of the police force and the county's fire chief.



*Location of the suspect farm*

The following measures were taken :

- within a radius of 1 km, the poultry was killed,
- within a radius of 3 km, the poultry was killed as instructed by the EU commission,

- within a radius of 10 km, the poultry was observed : dung, liquid manure, animal feed, litter, ...

On May 9th, 2003, the THW and the fire departments were assigned. Two decontamination tents were installed for the veterinary board's action forces and three decontamination sluices were installed for traffic.



For the media, a temporary press office was created outside the administrative centre. Cooperating with the press was one of the fire department's role.

The cooperation with organizations such as the German Red Cross and other authorities at different levels can be described as excellent in this mission !

## New technologies and future perspectives

### Disaster countermeasures for information and communication technology

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The employment of information and communication technology (ICT) causes increase of efficiency and quality of working processes. But thereby the dependency on technique increases too. A return to manual processes is often impossible.

The concentration of technical infrastructures is sensible and necessary for organizational and economical reasons. But this increases the



vulnerability to occurrences of local expansion contrary to decentralized systems.

Unpreventable calamities can stunt the availability of ICT-Services: spacious, long lasting power blackouts, flood, earthquake, terroristic attacks or air crashes, damages owing to fire or fire-extinguishing water, etc.

Therefore it is essential to take precautions for outage prevention and substitutions.

Emergency plans for several systems or services usually are subject of isolated considerations. Complex interdependencies and iterative correlations of causes and effects are not considered adequate at this. Precautions for cases of disaster require a comprehensive view on organization and technique. It is necessary to bring the separate plans together.

Catastrophe tests with all-embracing and correlative monitoring of efficiency of measures to prevent or remedy of failures in cases of catastrophes are necessary to validate plans.

Disaster recovery is a challenge that requires an interdisciplinary view on all correlated dependencies and a step-by-step plan from blackout to business resume.

Finally is to ensure that a comprehensive and up-to-date documentation is available without using technical infrastructures.

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## Security of information and communication networks

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Today's myriad options for instantaneous communications allow organizations of all kinds to establish and maintain real-time voice contact between users – but only if users employ similar devices and are on the same network. Although this capability is critical in emergency situations and for organizational efficiency, the inability of users with disparate devices or on separate networks to communicate with each other can cause potentially serious consequences. There is a need for true communications interoperability to address these concerns. Incompatible devices and networks mean that first responders, such as fire and police personnel, often cannot communicate with each other when an emergency occurs. Recent events have demonstrated the unfortunate results of such communication problems. In emergencies,

various organizations' network and operational silos can preclude the immediate interagency communication that is essential to effective incident management.

Additionally, as events develop, different types of information become relevant and appropriate. Often, voice communication through push-to-talk (PTT) service interoperability is the initial requirement for incident managers and first responders. But as a situation unfolds, additional data such as geographic information system (GIS) information, building plans, maps, or surveillance camera images can become increasingly important. Voice alone cannot provide this type of information – it is more effectively shared through methods such as instant messaging and videoconferencing. The ability to incorporate and convey information contextually, so that it can be delivered when, where, how, and to whom it is needed, requires robust communications interoperability. And communications interoperability facilitates real-time interagency collaboration, which is a critical component in the successful and efficient management of many incidents and events.

The Cisco® IP Interoperability and Collaboration System (IPICS) provides a systems approach to communications interoperability, operations, and emergency management that delivers the right information to the right person in the right format at the right time. Based upon proven IP standards and technology, Cisco IPICS transparently integrates disparate PTT networks, providing advanced features without requiring a change in existing operating procedures. It offers a flexible, dynamic, and secure platform that facilitates immediate sharing of information, improves daily enterprise operations, and provides a robust framework for real-time event management, while protecting investments in traditional PTT and Land Mobile Radio (LMR) systems. Cisco IPICS is designed not only to meet the immediate tactical needs of public safety and enterprise organizations, but also to establish a foundation for additional layers of powerful capabilities. The initial release of Cisco IPICS focuses on voice interoperability across multiple networks, and provides services for user management, policy creation, and integration of diverse PTT devices. But its underlying architecture will allow Cisco IPICS to extend well beyond voice interoperability to provide complete information-based interoperability and collaboration, with the contextual integration of voice, video, and data resources. As the system continues to expand, subsequent phases of Cisco IPICS will provide rich-media services



such as data and video collaboration, policy-based incident management, event-based operations and control, visualization, operations integrity, and reporting.

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## Communication backbones

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Today there is an increasing demand for reliable and secure cross-border communication between authorities and systems, which provides an essential overview of operations.

This is especially so in the event of catastrophes, whether they be natural, accidental or the result of an act of terrorism.

Humanitarian emergency aid has all the complexity of a military operation, and there is no doubt that civilian applications can benefit from existing developments within military systems.

Maersk Data Defence have the necessary tools to create interoperability between authorities and other important sectors, both nationally and internationally, and are experienced in assessing operational requirements in close cooperation with end-users.

*Tacticall*, which is based on IP technology, establishes the various players in a communication network that bridges widely differing communication technologies. The system is also prepared for video communication, which provides the possibility of establishing an online visual situation report.

The Maersk Data Defence Odin System is an information and decision support system, developed in close cooperation with the Danish armed forces. Even in its standard version, the system includes the functionalities that are necessary for planning and providing a situational overview in a catastrophe.

Furthermore, the system is adjusted for civilian applications as a Tacticall information package and covers the total spectrum of operations at all levels, from the crisis centre out to each individual person or resource.



Why Tacticall? Because Tacticall creates the tactical (TACTIC) foundation for the right decisions based on all obtained information. Everybody (I) can communicate (CALL) with all (ALL) the right decision makers and players in crisis situation.

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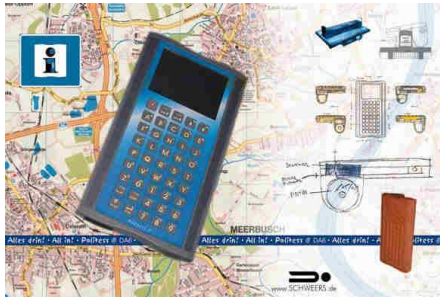
## Polites online – mobile devices for city servants

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Schweers is a global leader in handheld computing terminals primarily used for on-street parking enforcement. In this market, we have delivered around 10,000 units over the last 18 years.

Generally these units are being used by uniformed officers who, with the correct amount of information are an invaluable resource in the event of a disaster (natural or otherwise). As it is unrealistic to train these officers in all possible forms of disaster recovery and control, the handheld terminals can be used to provide this information. The large keypad and color display allows for easy entry and dissemination of information. The integrated printer also allows maps or instructions to be printed out if necessary. In later models, the use of GPS and Cameras can also have an invaluable benefit on the ground.





Early examples are shown by way of case studies in Rotterdam and Dubai showing connected terminals (via GPRS) and the ability to receive information remotely. These terminals are beginning to be used outside of pure parking control to help in the overall management of a city.

## Use of process management platforms for crisis management : lessons learnt from process analysis projects

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In a crisis, communication between the different actors (for example civil and military forces) needs to be facilitated. However before improving communication technologies, it is important to analyse how the different organizations communicate. For each type of disaster (natural, industrial, ...), there is a specific communication process to follow, with questions such as :

- what is the scope for civil-military cooperation ?
- where are the organizational interfaces ?
- what needs to be done and by whom in which situation ?
- do the others have the same understanding of our own processes and of co-operational requirements ?
- Who needs to be trained by who and to do what ?
- What needs to be communicated ?

Process management helps to increase performance within a specific organization and also across organizational boundaries.

## Scenario game : two terroristic attacks in Cologne

### Description of the scenario

Christian Ebner, Trainee, Professional Fire brigade Bremerhaven



The following scenario of two terroristic attacks in Cologne was developed :

The first attack happened at 11:32 a.m. at a filling station. At that time there were 24 people close-by. Some eyewitnesses reported an explosion, supposedly caused by a car. At 11:33 a.m. the Cologne fire brigade control centre was informed of the incident.

At 2:56 p.m. the second attack took place. The target was a football stadium with 45,000 visitors. According to several eyewitnesses the second explosion was caused by a Cessna, which crashed down onto the football stadium. The use of „Dirty Bomb!“ was strongly suspected. The participants of the Setric-Game had to assume that the cloud of smoke was radioactive. In the immediate vicinity of the event there was several public buildings/areas : a cathedral with 400 people, a central station with 2,000 people, a trade fare with 12,000 people and a park with 1,100 people.



Here are some examples of possible measures to avert danger :

- Decontamination
- Firefighting
- Rescue work for victims
- Providing shelter and food
- Medical attendance
- Defining the danger zone
- Alarming task forces
- Warning and informing the public
- Evacuation
- Requesting help from the EU
- Setting up barriers
- Crisis management
- Contamination measurements
- Initial information for/from hospitals



- Contacting the Foreign Office
- Activating disaster warning signs
- Closing the airspace
- Putting a hotline into operation
- Preventing entry to the danger zone
- Aerial observation
- Alerting local emergency units
- Defining marshalling areas
- Defining access routes
- Providing instructions to the public
- Providing psychosocial aid, ...

The participants' task was to prioritise measures to be taken.

Some of the participants classified the measures after the first attack into two categories :

1. Generic actions

- Setting up crisis management teams, warning and informing the public, rescuing injured people, etc.
- Securing the perimeter : defining the danger zone, setting up barriers...

2. Specific actions (for a terrorist attack)

- avoiding further terroristic attacks,
- evacuating the stadium,
- closing the airspace.

Other participants classified the measures in the following order :

1. confirming the risk : just an explosion in a filling station ? Terrorism ?
2. adopting crisis management
3. establishing internal and external communication mean
4. defining the danger zone
5. improving the crisis management system for possible future incidents.

## SETRIC Agenda

### **Kick-Off Conference**

*St-Augustin (FIT) (DE), 24<sup>th</sup>-25<sup>th</sup> February 2005*

### **Workshop 1 : Prevention**

*Naestved (DK), 26<sup>th</sup>-27<sup>th</sup> May 2005*

### **Workshop 2 : Mitigation**

*Lyon (FR), 30<sup>th</sup> June – 1<sup>st</sup> July 2005*

### **Workshop 3 : Response**

*Siena (IT), 6<sup>th</sup> – 7<sup>th</sup> October 2005*

### **Workshop 4 : Recovery**

*Praha (CZ), 8<sup>th</sup> – 9<sup>th</sup> December 2005*

### **Workshop 5 : Organization and communication**

*Cologne and Bonn (DE), 15<sup>th</sup>-17<sup>th</sup> March 2006*

### **Workshop 6 : Risk management and training**

*Bologna (IT), 25<sup>th</sup>-26<sup>th</sup> May 2006*

### **Final Conference**

*Paris (FR), 26<sup>th</sup>-27<sup>th</sup> October 2006*

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