



10/6/2011

Mass Crisis Communication with the Public  
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**MASSCRISCOM PROJECT RESULTS**  
**REGARDING**  
**MASS CRISIS COMMUNICATION**  
**FINAL WORK PACKAGE FOUR AND FIVE REPORT**  
**ON**  
**A CRISIS COMMUNICATION CENTRE**  
**(CCC) MODEL**

(Mass Crisis Communication and Integration with Situation Awareness WPs 4 and 5)



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## Summary

In order to improve communication between the public and media and reduce the burden on the European 112 Emergency Call Number, the proposal is to introduce a special organization devoted to crisis communication, a Crisis Communication Centre (CCC). By introducing this Centre as a common contact point, crisis communication can be managed efficiently also when sudden crises occur. At present, the crisis communication is most frequently only a one-way communication, i.e. the authorities disseminate information to the public but have difficulties in handling questions from the public or making use of the valuable information which the public could provide in a structured way. The CCC will be able to operate and play a role in all phases of the crisis, before, during and after.

Thus the CCC will be able to escalate its activities quickly and to handle a temporary very strong need of the public for both getting and providing information in the event of an incident. The escalation will take place both within the CCC organization and externally by promptly activating a network of selected officials within different actors and authorities which will be able to respond to the calls on behalf of the CCC.

A considerable problem for the public at present is to know who to contact in different types of events, i.e. who is responsible and how do you get in contact with this body? The introduction of an information call number, which is accessible at all times, will resolve this problem. The information number will be handled by the CCC and will be a channel for crisis communication, which is available in all types of events. The CCC will also be able to handle communication with the public through all types of media, for instance SMS, E-mail and Web-based Social Media. It is of fundamental importance that the information number system with its supplementary communication channels is operational at all times, has a high level of availability also in mass call situations and is made well known by the public, so that the number and channels are equally familiar as the 112 Emergency Call Number.

Such an information call number should be selected in accordance with a common European Union standardized plan of numbers for such purposes so that the same telephone number is used in all EU countries, in a similar way as the 112 Emergency Call Number. No common number is now reserved for information communication with the public in the event of crisis, but this should be introduced as soon as possible now when several countries are planning to establish an information call number. In a similar manner, contact addresses through for instance social media should be standardized to achieve a common structure for such addresses within the EU and facilitate communication.

The CCC must have at its disposal modern and adequate technology for communication and information management. A file management system should be elaborated, containing for instance a question index which is necessary for facilitating the handling many different types of anticipated events. It will not be possible to educate and train CCC operators to be able and be prepared beforehand for dealing with every specific type of event, but the question index provides support for asking relevant questions. Each file or call must however be categorized by the operator to get the adequate questions to which there is linked general guidance related to the type of crisis which has occurred.



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The setting of categories also gives the opportunity of detecting anomalies i.e. observing divergence from the normal data. In this way, the CCC can fulfil another of its task which is to inform and warn the competent authorities of a suspected or growing crisis. This will make it possible to detect at an early stage and avoid a gradually emerging crisis for instance polluted fresh water supply, break out of disease, terrorist attacks with biological or chemical substances, etc.



*A special function within the CCC will be responsible for monitoring and maintaining an overview of the general situation (situation awareness) and alarming about any developments of events and the course of an event which can be interpreted as a suspected or growing crisis. This function will also handle tasks given to it by the competent authorities to issue warnings and disseminate information to the public.*

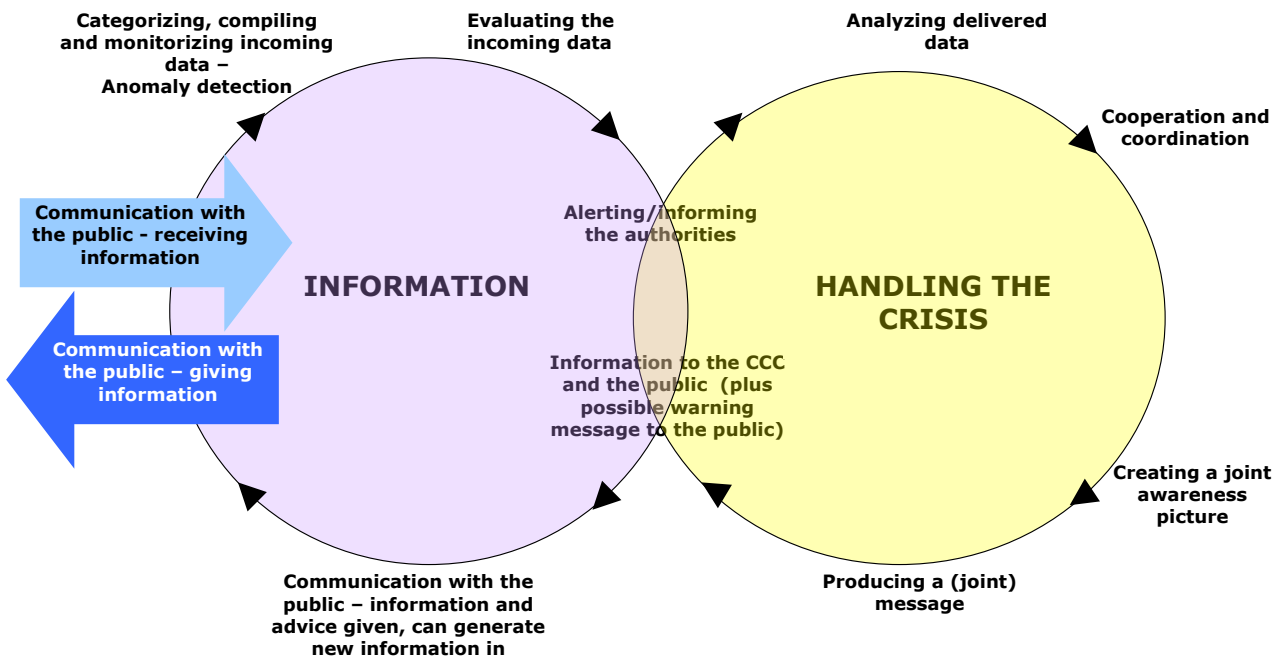
The CCC will therefore have the capability for issuing warnings, disseminating and receiving information from the public and providing guidance to people in society with particular needs, for instance people with the need for using a different language than the national language(s), with physical impairment, etc. For this purpose, the CCC will have a capacity of its own or establish a network based on for instance agreements with both language and sign language for hearing impaired services to handle these particular needs. The CCC will also have a system and technology to make it able to communicate on the channels normally used by for instance people with speaking and hearing impairment needing help for their own communications. The CCC should be able to develop its capacity at the same pace as new alternative communication channels come into use, for instance different forms of social media.



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The media quickly publish information when a crisis occurs, information which is often not verified and which can be misleading, exaggerated or completely wrong. The ex-tended use of social media also leads to members of the public being fast in starting to communicate with each other in such situations. Rumours can spread quickly and grow in size and numbers with a loss of credibility and criticism of the authorities which do not inform the public or provide information at a late stage. The authorities must therefore act with speed in respect to disseminating information to the public; otherwise the public’s picture of the crisis will become very different from the actual crisis.

It is of vital importance that the contacts between the CCC and the competent authorities are established quickly in a crisis and that each authority has internal procedures for being able to start its crisis management promptly as well as with speed disseminate preliminary information, which is up-dated successively. During the whole crisis, there must be close collaboration between one authority and other authorities and between each authority and the CCC and a continuous flow of information between all of them.



It is important that the competent authorities have access to the same inputs of information to be able to create a common situation awareness regarding a crisis and from this form their understanding of the situation and draw conclusions on how their own authority is concerned and will focus its continued crisis management. The condition for this is an understanding of the importance of cooperation horizontally across sectors and an ability to share information also when a crisis leads to a heavy burden for the authority to handle.

The authorities should share the same situation awareness system which is based primarily on data from the database of the CCC but also data from the involved authorities, all involved authorities having a responsibility for sharing information and collaborating in their tasks of handling information matters.



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Competent authorities on local, regional and national levels must be able to make use of the CCC and have access to and feed in data to the situation awareness system.

One of the functions of the CCC is to maintain an "editorial office" (EO), which together with the affected competent authorities, is devoted to enhancing the quality of information to be provided by the authorities to the public. By conducting this collaboration, the EO sees to it that the information provided by different authorities is compatible, to ensure that the message to the public is coherent or similar. The EO will also be responsible for the national Website and the crisis portal for disseminating common information from the authorities to the public.

Conclusions:

- The establishment of a CCC and elaborated and well known contact points and channels for the public would lead to an improved capability for communication between the public and the competent authorities as well as a reduced burden for the 112 Emergency Call Number and the authorities themselves in a crisis.
- The establishment of a national information call number to be used for two way communication with the public will be one of the contact points and channels.
- The information call number should be selected in accordance with a common European Union standardized plan of numbers for such purposes so that the same telephone number is used in all EU countries, in a similar way as the European 112 Emergency Call Number. No common number is at present reserved for information communication with the public in the event of crisis, but such a number should be introduced as soon as possible.
- The CCC will have the capability of both providing information and receiving information through many different channels and media.
- The establishment of a CCC would enable an improved management of a suddenly occurring crisis with a temporary heavy information management burden, also due to the ability of the CCC to escalate its activities quickly with an increased number of staff on duty.
- The CCC will on request from the competent authorities be able to promptly disseminate warnings to the public using different channels and media.
- The CCC will also have the capability for issuing warnings, disseminating and receiving information from the public and providing guidance to people in society with particular needs, for instance people with the need for using a different language than the national language(s), with physical impairment, etc. For this purpose, the CCC will have a capacity of its own or establish a network of channels to be able to handle this task.
- The information received by the CCC will be monitored automatically or manually, analysed and compiled so as to form a basis for decisions to be taken by the competent authorities.
- The CCC will serve as the connection for the competent authorities in crisis communication with the public and will ensure the quality of the communication by transmitting a common message from the authorities to the public.
- The authorities must act with speed in respect to disseminating information to the public, otherwise the public's picture of the crisis will become very different from the actual crisis, due to how quickly media publish information and the public's growing speed in starting to communicate with each other through social media.



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- It is of vital importance that the competent authorities have access to the same basic information to be able to create common situation awareness. From this, each authority makes its own assessments of the situation, draws conclusions on how it is concerned and decides on how to conduct its crisis management.
- The competent authorities should thus share the same situation awareness system which is based on data from the database of the CCC but also from the involved authorities themselves as all involved authorities have a responsibility for sharing information and collaborating in the work dealing with information.

## Definitions

### Public

The word public is used and not citizens as it includes all persons present in a national territory or geographical area irrespectively of their or nationality. In crisis communication, the public can never be seen as a completely homogene group of people, but will instead consist of people with different sex and age, different cultural, political and religious interests and people with particular needs due to handicaps, for instance hearing impairment, etc.

### Detection of anomalies

Finding patterns in data, which do not correspond to normal or defined data.

### Crisis Communications Centre (CCC)

By the Crisis Communication Centre (CCC) is meant a common contact point for communication in all phases of a crisis (before, during and after) between the competent authorities and other crisis management actors on the one hand and the public and media on the other with the role of disseminating information and also for responding to questions and receiving information from the public, which can be valuable for the crisis management.

### 112 Emergency Response Centre (ERC)

An ERC responds to the 112 Emergency Calls from people who are in urgent need of immediate help from any public competent authority responsible for emergency response and involved organisations in society.

### Crisis

By crisis is meant an event which affects many people and large parts of society and threatens basic values and functions in society. A crisis cannot be handled by the regular emergency response services and critical infrastructure providers but is an unexpected and unusual event which requires active coordination between a several different actors. Generally, a crisis can be a sudden event which escalates very quickly occurring frequently without any warning or an event which evolves gradually with a certain degree of early warning. Also an incident which is interpreted by the public as a crisis can require crisis management measures to be taken.



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### **Crisis management**

By crisis management is meant a capability to manage the crises that may occur and consists of the elements being able to exercise leadership in a crisis and maintaining operational capacity.

### **Situation picture**

By situation picture is meant the fusion of data to provide visualized information on what has happened, is happening or will happen.

### **Situation awareness**

Situation awareness is a perception of how what has happened will impact on the decision making of a crisis management actor. The foundation of the situation awareness is the situation picture. Both the situation picture and the situation awareness are connected to the decision making and are necessary for determining if action is required in some way and if this is the case what action.

### **Mass Call Situation (A high call volume or Call Volume Spikes)**

By a Mass Call Situation is meant a situation when there is such a high volume of calls under short periods of time on for instance the 112 Emergency Call Number that these cannot be answered within a reasonable time by the normally available capacity.

### **Crisis management actors collaborating**

The crisis management collaboration has the form of horizontal dialogue between different competent authorities and independent crisis management actors to achieve coherent and common goals.

### **Social media**

By social media are meant the use of a combination of web-based and mobile technologies to turn communication into interactive social dialogue. These media are relatively inexpensive and accessible to enable anyone to publish or access information and provide opportunities for social interaction, using highly accessible and scalable communication techniques. Social media is thus the use of such different forms as Internet forums, weblogs, social blogs, microblogging, wikis, podcasts, photographs or pictures, video, rating and social bookmarking. The technologies include blogs, picture-sharing, vlogs, wall-postings, email, instant messaging, music-sharing, crowdsourcing, and voice over IP. Many of the social media services can be integrated via social network aggregation platforms.

### **People with particular needs**

In this report by people with particular needs is meant persons who cannot communicate by regular crisis communication channels, due to their lack of ability to speak any official language in the country where they are during the crisis. This may also be due to for instance a physical handicap such as hearing or speaking impairment and people with particular needs therefore have to be addressed through alternative communication channels.

### **211 and 311**

In the United States, there are the information numbers 211 and 311. The voluntary organisations United Way Worldwide (UWW) and Alliance for Information and Referral Systems (AIRS) are



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together providing the 211 information number with focus on social affairs in 47 States. They have been an important actor in managing communication of information in different crises. Through the 311 number, which is managed by local authorities, various important non-emergency services can be reached. Since 311 is a relatively new service, not all localities offer the 311 service but its use is rapidly gaining momentum as more and more local agencies are offering it.

## Introduction

The project has had the task to address, with an all-hazards approach and subject to existing conditions, and propose a system to cover the risk and crisis communication needs in the County of Uppsala with its high risk conditions. For conducting the risk and crisis communication, information on the risks and threats has to be integrated into the contingency risk mapping and planning to form part of the situation awareness. Advanced information has to be distributed through secure channels of communication and general information will be compiled and prepared for distribution to the public through available media channels as well as at common press conferences. Sufficient but limited information will be provided through a system with selected (GIS) base stations to enable the citizen in specific regions to take appropriate action. The future crisis communication system to be developed will facilitate communication in general but also with particularly vulnerable groups and in different mother tongues.

The project work on the crisis communication system was divided into the following Work Packages (WPs):

**WP3 – Crisis Communication Development** – was to create the specifications of the crisis communication system including service specification, system specification and operational procedures. The results of WP3 were to guide the definition of the overall system requirements for a generic crisis communication system which was to be presented and demonstrated in WP6

**WP4 – Mass Communication** – was to create the specifications of the mass communication system including service specification, system specification and operational procedures. The results of WP4 were to guide the definition of the overall system requirements for a generic mass communication system. A "Crisis Communication Centre" (CCC) including a proposal regarding a separate information number(s) service was therefore to be presented at the demonstration in WP6.

**WP5 – Integration with Situation Awareness** – was to create the basic functions for the contribution of information to the situation awareness system which was to include elements from WP3 and WP4 and be presented at the demonstration in WP6.

**WP6 – Demonstration** – was to present the service components developed in WP3, WP4 and WP5 and resulting in a coherent generic communication model. The demonstration was to present the different elements of the model, combined with a seminar to consider and discuss the project results

## Scope

MASSCRISCOM aims at presenting a methodology for crisis communication and system for management of the communication which contains as its main part the establishment of a Crisis Communication Centre (CCC) but also the use of social media as well as the introduction of a national, and possibly a common EU, information number service. The CCC should conduct its work and be



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integrated with the competent authorities as well as relieve the pressure on both the 112 emergency call number service and the authorities in a crisis. The aim is also to demonstrate how the presently implemented one way communication with the public can and must become a two way communication. The Project furthermore has the aim to illustrate how communication with the public can be conducted with the help of both a national information number and other communication channels and to describe how different communication channels can be used for the communication. Finally, the Project aims at presenting the arguments for why and how the introduction of a common EU information number, or information number system for the two way communication with the public, can be accomplished and function in a similar way as the 112 emergency call number, irrespective of in which EU country the person affected by the crisis and making the call is.

## **Goal**

The goal of MASSCRISCOM is to provide the crisis communication actors in EU guidance on how to establish their Crisis Communication Centres in order to achieve that the present one way communication with the public is turned into a two way communication capability, to increase the present arsenal of means of communication with the public that can be used in crises, i.e. moving from only using telephones to include also for instance social media, and exercise influence and promote the introduction of a common EU information number or call number system (including a number structure if several numbers are to be used) for the two way communication with the public. It will be up to each country to decide on what level of ambition it finds appropriate for its crisis communication, which capacity the system should have, how many operators are to be on duty in the CCC, etc. In this Report, the proposal is that the establishment of the CCC should build on existing resources.

The Project will therefore not present new proposals for organisation and coordination of crisis management or the 112 system or develop any new technical system(s) for presentation of situation awareness, etc. Focus will instead be put on process rather than on the organisational matters and the work will build on the competence and practical experiences of the Partners. This report does not address the economic issues related to crisis communication for instance what the introduction of a Crisis Communication Centre (CCC) will cost. As an important reason for the introduction of a CCC and national information number is to reduce the burden on the 112 emergency call number, it is possible to assess the benefits in relation to the costs when it comes to saving life as the answering to real emergency calls will not be delayed as is sometimes the case at present. Also the benefits of being able to disseminate more quickly warnings, information and guidance through a CCC in a crisis can minimize the costs related to injuries and fatalities. MASSCRISCOM will furthermore only present the CCC activities in crises and not its everyday use. The CCC will naturally fulfill a number of tasks in non crisis situations for instance dissemination of general information to the public, managing non emergency municipal information services, etc.

The report departs from different types of quick and more durable courses of events, considers benefits and conditions for creating a nave for crisis communication in the form of a CCC and defines what functions, competence, etc. this should have. The benefits of introducing a number or series of numbers for crisis communication are studied as well as the communication flow in an event. The growing communication in society through social media is dealt with and an idea of how these can be used in crisis communication is described. How crisis communication with people with particular needs in relation to the language used and hearing impairment is to be carried out is presented. Finally, the important qualities which have to be found in the technology that the CCC uses for



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gathering and disseminating information and guidance and compiling data and presenting it to authorities are specified.

### **Target group for the crisis communication**

The target group for the crisis communication is the general public in a wide sense. The public is not at all a homogenous group as it consists of people of different sexes and ages, with different cultural backgrounds and interests and who may belong to different religions and live under different conditions, etc. Each person will most probably have different expectations and needs. This must be taken into account when the system for crisis communication is established so that it encompasses all groups of people in society.

Of fundamental importance and a necessity to reach the target group is to implement the technical means for the communication which the public regularly uses, i.e. for communication with elderly people most probably fixed telephony and TV and with young people mobile telephones and social media. In a modern globalized world, it must be possible to use different languages in the communication. The methodology and technology must be adapted to the particular needs of people with for instance hearing and physical impairment and to address people in a state of shock and suffering or being upset for different reasons.

The needs for communication and information of the target group may differ geographically in the country and those who are closer to the event that has happened naturally have a greater need for information and communication than those who live far away from it. This may also be the case with people who have relatives living or being present close to the site of the event, even if this is in another country as was for instance the case in the 2004 tsunami in Asia when many Europeans were killed or injured there.

The best or appropriate way of conducting the communication with the target group may vary around the clock. On a working day during working hours, TV is often not the best means for communicating, but in the evening during "prime-time" transmitting warning and information in rolling texts at the bottom of the TV screen will reach very large amounts of people. The best method to use for communicating may also depend on the type of crisis. If it is a crisis which affects the electricity supply in large geographical areas, then many modes of communication are knocked out, for instance mobile telephones, fixed telephones, computers, etc., will not be possible to use, at least not once the electricity in battery has run out.

### **A quickly escalating crisis**

A crisis can have a very rapid course of events and in a very short time escalate significantly without any possibility of keeping it under control. Events of this type can occur without any form of early warning or, if there is an indication of it beforehand, then this will in most cases be very shortly in advance.

For a crisis is thus characteristic that it has a rapid course of events and happens suddenly and unexpectedly without any early warning and that it causes a considerable immediate worry among the public in the affected area. This creates a large need for information as well as acute emergency assistance to those affected directly and in consequence requires immediately large public resources.



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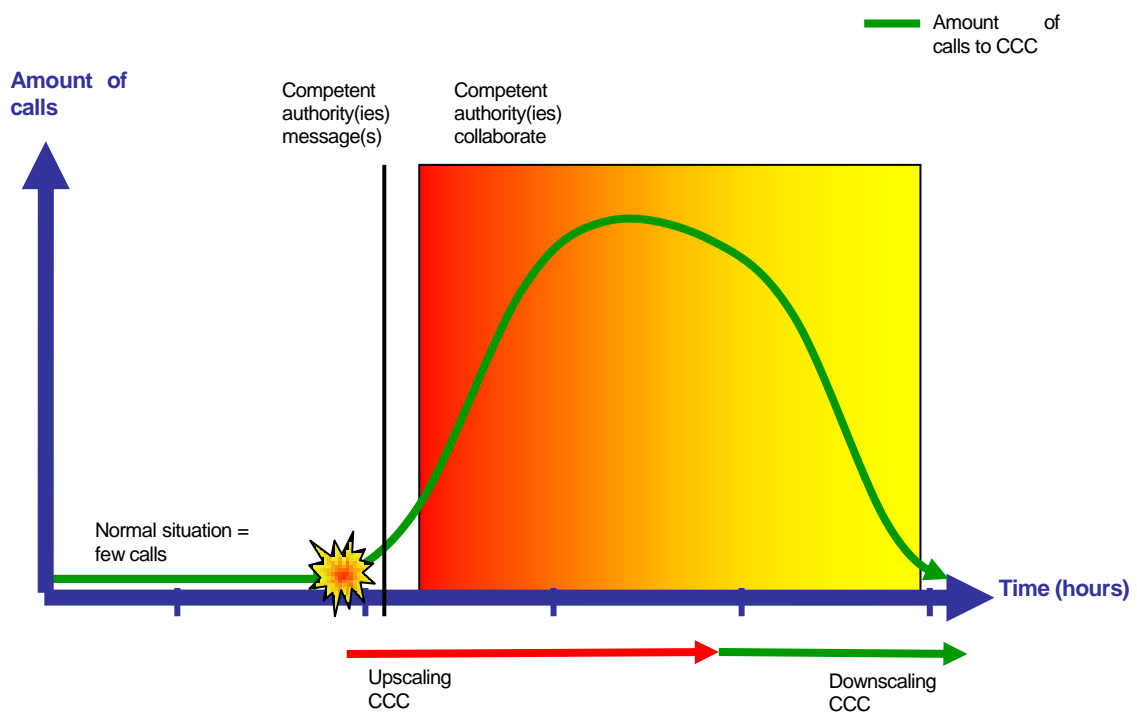
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Examples of such events can be a derailment of a passenger train, a large release of hazardous chemicals or gases or a dam breakage with severe flooding as a consequence.

Crises with a rapid course of events in which there has been an early warning are on the other hand characterized by society being able to mobilize certain parts of the preparedness, determine what resources are available and begin collaboration to minimize the consequences of the crisis. Examples of such events are weather events such as approaching storms, heavy rain and snowstorms.

A crisis with a rapid course of events will often, but not always, be over comparatively quickly even if the work required for recovery after the crisis itself can have a long duration, for instance the tsunami 2004 in Southeast Asia.

### A crisis with a rapid course of events



*Crisis with a rapid course of events; no early warning, large instantaneous anxiety, immediate need for large resources to respond to the crisis and large need for information to and receive information from the public*

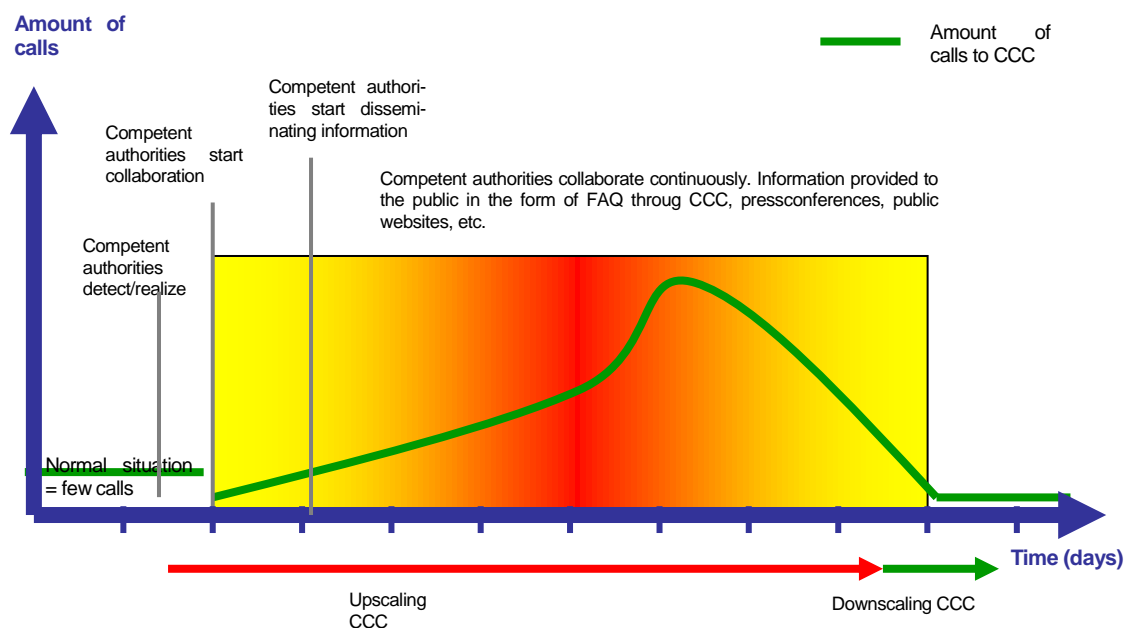


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#### A crisis with a gradual/slow development

A crisis can have a slow development and escalate in size slowly, linearly, step by step or exponentially over a longer period of time. Such an event can happen without any previous warning or with a certain warning, but is characterized by society often being able to prepare itself. This is naturally dependent on the crisis being detected early enough. This type of crisis can have a long duration and examples are sicknesses of people or animals such as the Newcastle virus or the bird flu or swine flu (AH1N1) or natural disasters like the Eyafjallajökull Vulcano eruption in Iceland.

#### A crisis with a slow course of development



*Crisis with a slow course of events, often early warning, increase of anxiety, mobilizing resources for responding to the crisis and increasing need for information to and receiving information from the public*

A crisis can naturally consist of a combination of rapid and slow course of events with development in the initial phase being rapid but course of events after this having a long duration. An example of this is a nuclear power plant accident.

#### Methodology and organization for crisis communication

In order to keep in step with the technical development, the methodology and organization for handling the new technology and the communication in the event of crisis must also be improved and the structure for this adapted continuously. Crisis management is now managed by many authorities and other actors, and the ambition must be to both support these by reducing their burden and estab-



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lishing a common name for the crisis communication, instead of having the crisis communication conducted by many different actors. The consequence may be, if the worst comes to the worst, that the message to the public is not coherent or unified which can easily lead to confusion, anxiety and reduced credibility of the crisis management conducted by the authorities.

There is a considerable need in connection with particular events for enhanced crisis communication both from the side of the public and within the relevant authorities. Massmedia nowadays provide promptly information as soon as something has occurred but this often leaves many questions to be answered and the disseminated information is not always correct. The public will therefore also search, much more quickly than previously, for more information about the event. If there is no telephone number indicated or to be found for calling or another forum provided for use by the authorities for disseminating information, then the person seeking information will send a question to relatives and friends using the telephone, sms or social media, asking if anybody knows more about the event. This may easily lead to rumours being spread which create a completely or partly false picture of the crisis.

### **Social media**

More and more exchange of information now takes place in the social media for instance different Internet fora, blogs and different online communities. This development has completely exploded in the last few years with Face book as the most prominent example. The extended use of social media for everyday communication can most probably also lead to facilitating and improving crisis communication in the event of a crisis. One example of this is what happened in connection with the earthquake and following tsunami in Japan on 10 March 2011 when the mobile network was not working for some days. It was however possible to communicate in social media such as Facebook as the Internet traffic largely continued to work . In this way a person can both gather information from others and share information. It is obvious that authorities can communicate in a similar way using social media.

### **People with particular needs**

In a crisis situation, people with particular needs can be in a very difficult situation and particular measures should be taken to enable communication with them. People with hearing impairment can for example have problems in getting the warning messages which are sent through the traditional channels such as sirens or messages transmitted through the radio. It is also difficult for them to make a telephone call to get information and they are instead referred to traditional media such as text telephone or providers of such services or as an alternative to seek information from friends and relatives. In the Netherlands, the opportunity is offered to people with hearing impairment to call the number 0800-8112, instead of making a 112 emergency calls, and receive help through a text telephone, in Austria such communication can be made through facs or SMS to number 0800 113 113 and in Sweden through text telephone or SMS to the 112 emergency call number. Text telephone is however an old fashioned technology and requires considerable time to use, which is also the case with SMS. For persons with particular needs, social media can be a more accessible means for getting information and providing information in crises events.



## Mass Crisis Communication with the Public MASSCRISCOM

### Communication flow

The communication flow in a crisis is complex and often many people are involved, both the public seeking information and the public wishing to provide information as well as crisis management actors and competent authorities managing the crisis (and the situation picture). MASSCRISCOM has the ambition of presenting an ideal flow of information during the crisis in which the communication nave is a Crisis Communications Centre (CCC) providing capability for communication between the public and the authorities.

This presentation is based on different types of events (a quick course of the event or a slow course of development event), describes the benefits of and conditions for creating a nave for crisis communication in the form of a CCC and what roles, competence, etc. such a CCC should have. Also the benefits of introducing an information number or series of numbers for crisis communication purposes are described and the flow of information in a crisis is illustrated. The increasing communication in society through social media is addressed and a suggestion on how these can be used in a crisis is also presented. The communication with people with particular needs in respect to language or handicaps is illustrated. Finally, the important capabilities of the technology to be used by the CCC for gathering and providing information and guidance, compiling data and presenting this to authorities are specified.

### Communication in a crisis

For obtaining an ideal flow of the crisis communication, it is of the utmost importance that the communication system is well structured, reaches all possible involved actors and has been exercised before a crisis happens. A number of statements coming from an overview of knowledge concerning crisis communication of authorities have been quoted as follows:

Crisis communication cannot be managed in an optimal way without preparedness

The work of the authorities must be based on considerable credibility

A number of conflicts become visible during crises: for example time conflicts, source conflicts and responsibility conflicts

The authorities must be prepared for the enormous need for communication which will appear in the crisis

That there are prepared communication channels, that all involved know their own roles and responsibilities and those of other participants and, naturally, that the public is all the time in focus will therefore be of vital importance for the communication in a crisis. The ideal communication flow will emanate from some set conditions, namely that:

- a functioning collaboration between authorities at different levels and in different sectors has been achieved
- a Crisis Communication Centre (CCC) has been established which functions as a nave for crisis communication between the public and the authorities



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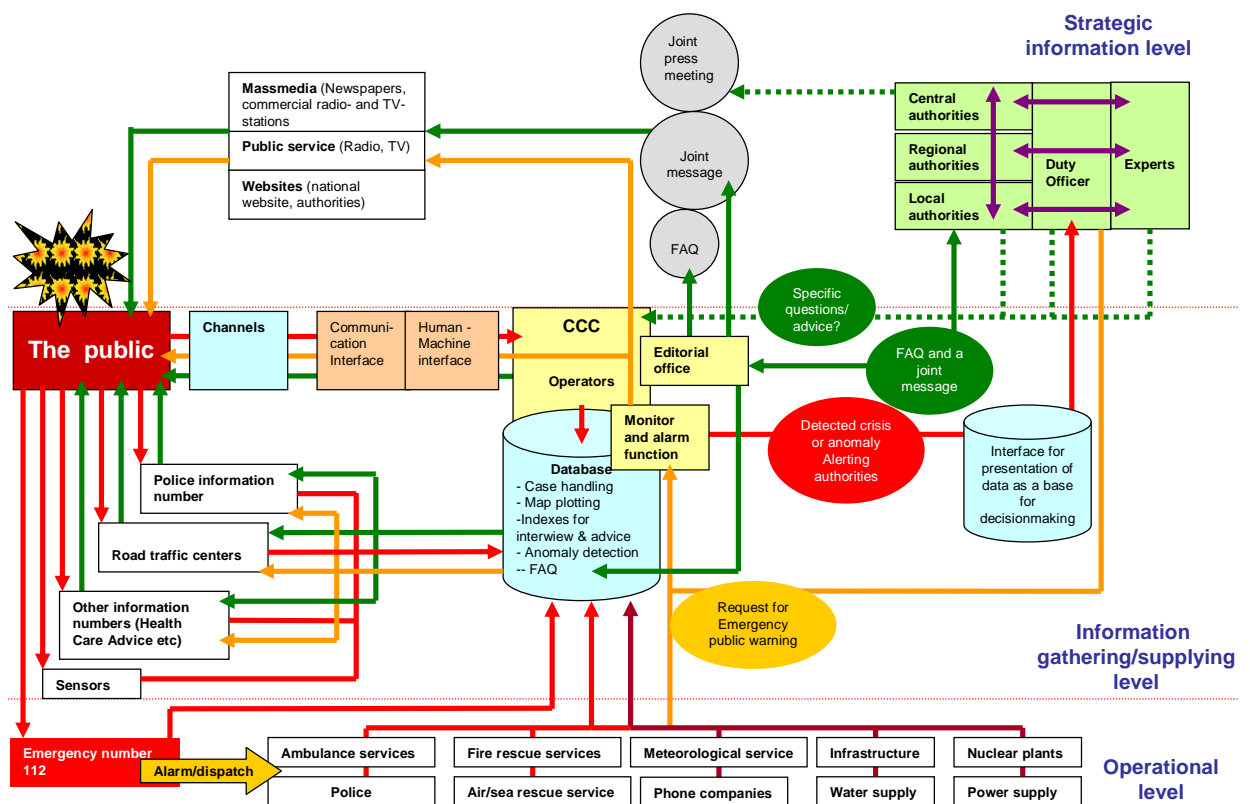
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- a special database which communicates with the databases of the different involved actors and competent authorities supports the crisis management actors and authorities and the CCC

All these three conditions are of vital importance and, without the collaboration, the CCC and the special database will be of no value. If all authorities at local, regional and national level and within different sector responsibilities are not used to collaborating, are not aware of the need for providing information and communicating with the other authorities and do not understand the importance of this as a condition for being able to manage a crisis satisfactorily and in the best possible way, then the crisis communication will never work sufficiently well in the crisis, irrespective of how many communication centres that are created, how many databases that are linked to each other or which system or methodology that has been elaborated and introduced. The MASSCRISCOM communication model will therefore assume that these conditions are fulfilled to ensure a necessary and efficient communication flow.



This figure describes a desirable crisis management communication flow with CCC as the nave.

Red arrow = information in

Green arrow = information out

Yellow arrow = warning message out



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When a crisis event or accident occurs which affects the public, then the public will start making calls on the common EU 112 emergency call number. Quite soon after this, calls start coming in to the CCC and to other information numbers. The calls to the CCC come through a number of different channels and media, telephone, SMS, e-mail, Facebook, etc. Each of the contact points feed the incoming data from the public into their own databases. The CCC interviews the callers to gather information in accordance with a prepared index for the event and can provide available prepared guidance already in the first phase. Data is also received from the involved operational emergency management resources and from other operational actors, call numbers for reporting faults of different types, meteorological observers, etc.

Each database transfers the data to the large CCC database where the monitoring and alarm function, after analysing the data, may detect anomalies or patterns in data, which do not correspond to normal or defined data, and understand if it is a large event which has to be reported to the relevant authorities. The officer on duty can also task the CCC to ask particular questions about the event and can in a special interface get an overview of the number of contacts, what they have reported and the geographical area affected by the event. The duty officer can give the CCC the task to ask more specific questions about the event and to provide specific guidance.

When an event turns out to be urgent enough for the duty officer of the relevant competent authority to decide that a warning message is to be dispatched to the public, then this is immediately executed by the CCC through different channels, such as cell broadcast, TV, Radio, sirens and Twitter. The involved authorities will now collaborate in the analysis of the event and the preparation of a common communication strategy in accordance with prepared plans. Establishing a FAQ database with questions and answers is an important part of this action. In order to prepare this and common information from the authorities to the public, cooperation is established with the CCC communication specialists at the CCC Editorial Office. A balance must in this phase be achieved between the importance of disseminating the message quickly and ensuring that the information is verified and correct.

The CCC has access to the FAQ database and can with its assistance respond to the questions from the public. Questions that cannot be answered directly are sent to the authorities for the preparation of an answer which can be used once it is ready for answering the questions. The information and FAQ are also presented on the websites of the authorities and on the national crisis website with the support of the Editorial Office. Massmedia is given access to the information and can present it in its flow of news. Common pressconferences are held by the relevant competent authorities involved, as appropriate.

The communication of the CCC with the public is conducted on all available channels and also as far as possible with the individual who called, on the channel he or she prefers. The operators of the other information numbers can fetch data from the CCC database and also follow the development of the event and provide the same information to the public. The work continues in a similar manner until the crisis is over.

The figure below has the intention of demonstrating step-by-step the activities being conducted and also in chronological order the measures taken by the CCC and the authorities.

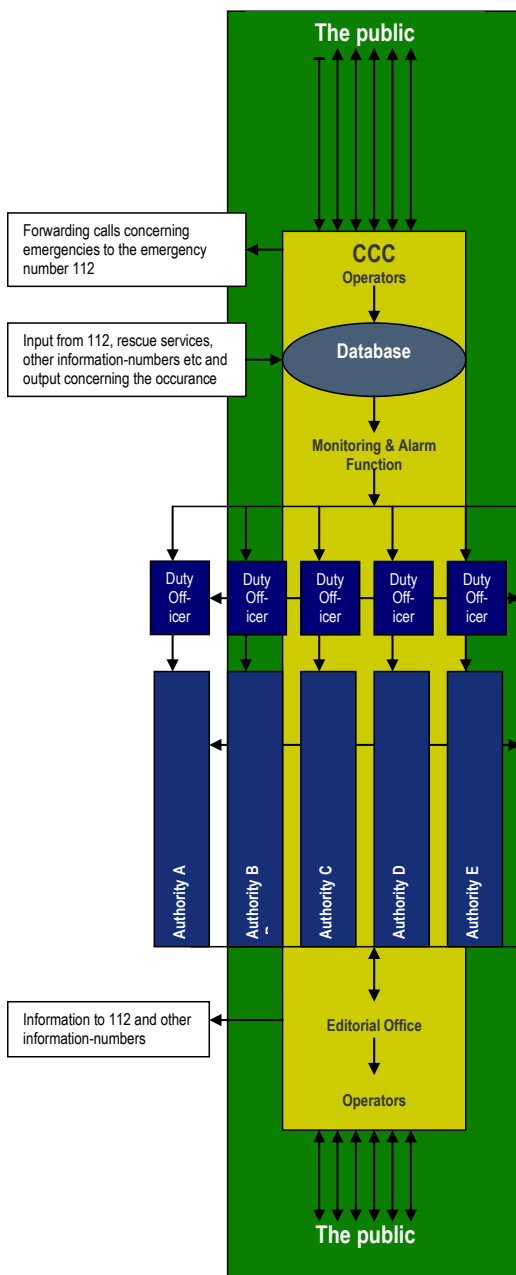


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**Actions taken:**

The public: Seeking confirmation on the occurrence. Wants information and/or advice. Can give information about the occurrence direct or indirect (e.g. about the road traffic situation in the affected area). People with special needs requires special

CCC operators: Continuous communication with the public through different

CCC operators: Activating Interactive Voice Response, confirming that the authorities are aware of the occurrence

CCC operators: Information in/out, interview, positioning and categorising the

CCC operators: Active steering of calls to predefined information channels

CCC operators: Translation of information to different languages and sign

CCC operators: Escalation of staffing in the CCC

CCC database: Automatic gathering and compilation of data from different sources

CCC database: Automatic anomaly-detection

CCC Mon. & Alarm Funct: Manually monitoring and analyzing data from CCC and different sources

CCC Mon. & Alarm Funct: Selection of data regarding the occurrence

CCC Mon. & Alarm Funct: Alerting the concerned authorities (Duty officers), sending compiled data regarding the occurrence

Authorities Duty Officer: Analyzing and evaluating the

Authorities Duty Officer: Alerting the management in respective authority

Authorities: Connecting with other concerned authorities (via CCC Mon. & Alarm Function)

Authorities: Continuous cooperation/ coordination in joint meetings or telephone conferences

Authorities: Forming a joint situation awareness

Authorities: Cooperating to compile a common message to the public

Authorities: Develop joint strategies to handle the crisis

Authorities & Editorial Office: Develops together a base for an inter-agency information in an FAQ-database

Authorities & Editorial Office: After developing and editing a FAQ, publishing it in the CCC database where the CCC- operators and other information numbers can use it

Authorities & Editorial Office: Publishes the inter-agency information on the national crises webb/webb portal and on every concerned authority's own web-

Authorities: Prepares and goes through with a joint press conference

CCC: Constantly updating the database with incoming information from the public and other sources

Authorities & Editorial Office: Constantly updating the FAQ-database, web-pages and other sources of information with inter-agency information

The public: Constantly provides the authorities with new information via the CCC and are constantly in need of new information from the authorities on what is happening and actions

In the following the different steps in the flow of the event above will be presented more in depth and also the methodology which will be described more in detail.



**Mass Crisis Communication with the Public**  
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## **Crisis Communication Centre (CCC)**

There is a clear need for having a designated actor for the overall coordination of the crisis communication in the form of a contact and communication centre forming a nave around which all crisis communication circulates and which serves as the facilitating link between the public and authorities and vice versa. In consequence, MASSCRISCOM suggests that it is called the Crisis Communication Centre (CCC). The reason for choosing Crisis Communication Centre and not Crisis Information Centre is to underline that it is a matter of two-way communication with the public and not only information in one direction. It is also not appropriate to choose the wording Call Centre as a number of other channels than telephone are used, i.e. websites and social media.



The role of the CCC is focused on its service as a communication centre for crises and communicating through many different channels. In order to be able to operate immediately in a crisis or when an event which can be assumed to grow into a crisis has been detected, it is very important that the CCC is always in operation, around the clock and all the year, but when there is no crisis or crisis preparedness measures being undertaken, the CCC should carry out other regular tasks of similar character. To start the CCC from scratch once the crisis has happened would mean, in particular if the crisis has a fast development of events, that much valuable time in the initial phase of the crisis will be lost. This would also be contradictory to the aim of the CCC, namely to dispatch warnings and gather and disseminate information from and to the public and also to provide guidance quickly to the public.

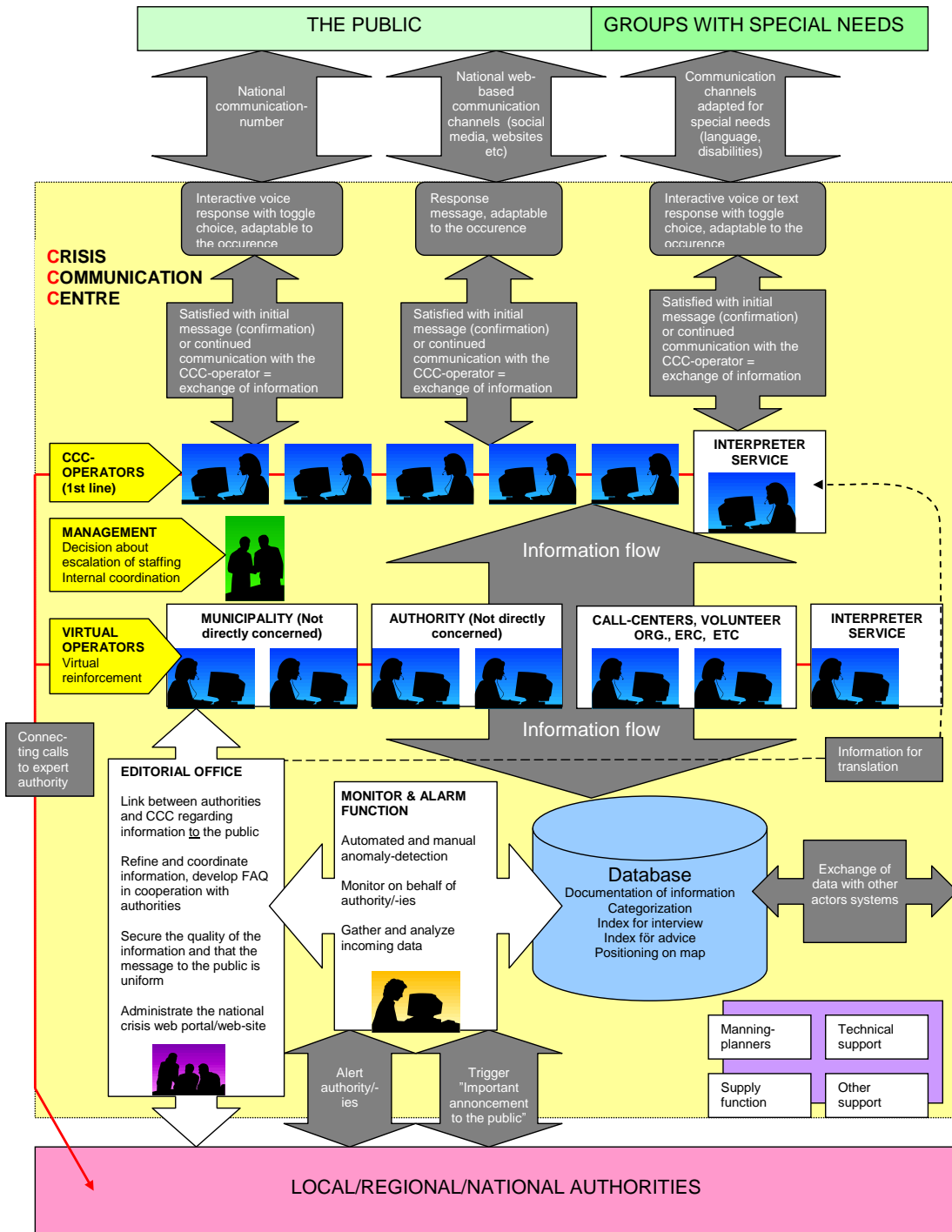


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*This illustration demonstrates how the different parts of the CCC collaborate with each other and with the public and authorities*



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All CCCs that may be established should be under the responsibility of one actor, preferably an actor independent of the involved authorities to give it an impartial role and thereby not being closer to one or other of the authorities. Importance should be given to the CCC having a generic character of work in order to be able to act within all sectors and detect crisis irrespective of the type of event or which competent authority is involved. Certain of the tasks described can be handled outside the CCC and instead form a separate function in for instance an authority, but in this case equally high requirements on collaboration between the management of the tasks must be set as if they were all managed by one actor.

The CCC as defined in this report will have several functions, namely to:

- serve as a contact point for the public to reduce the burden on the 112 emergency call number
- provide the public quickly with verified information about on-going events and risks
- receive information from the public about events that have occurred and observations
- serve as a channel for collected and coordinated information from authorities and other actors to the public
- provide a basis for analysis and detection of events for instance as a result of detection of anomalies

### Aim of the CCC

One of the most important aims of the CCC is to quickly be prepared to fulfil the public's requirements and the expectations in respect to quick dissemination of correct and complete information from the authorities. There is often at present no defined telephone number or contact point for crisis events available for the public to turn to in situations when one wishes to have information, at any rate they are not well known by the public in general. Sometimes, the public does not know what authority has the main responsibility in an event. This leads to many people instead calling the EU 112 emergency call number, even though it is not an urgent emergency situation and when the intention is only to ask for information. In some cases, this can result in people who are in urgent need of emergency help not being able to get through to the EU 112 emergency call number but having to wait. The aim can thus be specified as follows:

- Relieve the pressure on the EU 112 emergency call number from calls of non emergency character from the public to ask for or provide information
- Reduce the burden on authorities in a crisis event in particular when it happens outside office hours and non emergency service often are closed
- Serve as an alarm function for activation of authorities in crisis situations
- Have a generic and wide perspective on a situation instead of a specialized and narrow one and thus be able to identify a threatening crisis irrespective of its type
- Compile information from the public and different sources as a basis for the decision making of the authorities on direction and other action
- Be able to manage crisis events in a professional way by being a well educated, experienced and well shaped organization



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### **Goal/objective of the CCC**

- Confirm to the public that the situation is known by the authorities, in the event's initial phase before more information is available for dissemination
- Transfer quickly important information from the authorities to the public regarding the measures that have been taken and what each person should do in order to reduce anxiety and suppress rumours
- Give advice to the public in different types of situations
- Convey calm and security to the public
- Gather relevant information from the public
- Analyze the information from the public and other sources and through detection of anomalies discover approaching potential crises
- Alarm and inform the authorities about potential crises that have been discovered
- Compile the information from the public and different sources into a consolidated overview as a basis for decision making by the authorities
- Identify needs for help and facilitate help to individual persons who do not for example have or have access to food, fresh water, medicine, etc.

### **Activity of the CCC**

It will not be possible to have an efficient CCC, if it is not a permanent activity and only start communication activities once the crisis is a matter of fact. If the CCC is permanently active responding to calls from the public through different channels and in regular communication with the public then this will be a significant benefit for its capability to act in the anticipated way. The CCC is expected to be promptly in action in the event of a crisis with a quick development, when the public will have an immediate need for providing and getting information and guidance. Also to be able to reduce the very heavy burden on the 112 emergency call number and the authorities in the initial phase of an event, the CCC has to be permanently prepared for immediate action. If the CCC is to be given other everyday tasks, then these should be such that they can be set aside or taken over by others when there is a crisis.

### **Redundancy in the CCC**

There must be at least two, preferably more CCCs in a country, to ensure redundancy or business continuity should one of them be put out of action due to for instance electricity or telecommunication break down or a similar situation. The CCCs should be located in well separated geographic areas to minimize the risk that an event in an area knocks out both or all centres at the same time.

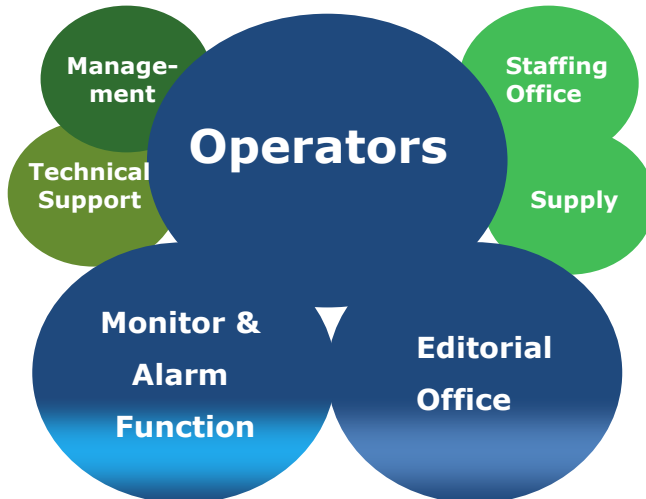
It is important that the CCC has a high level of redundancy in its technical equipment so that the system can in principle always be in operation. There should be a separate back-up and possibilities to work in separate systems or through alternative channels and reserve power supply. Technical support must be available around the clock all the year. If such support is not available within the CCC organization, then it must be ensured through legal agreements with external parties as a part of the business continuity planning.



## Mass Crisis Communication with the Public MASSCRISCOM

### Different components of the CCC

A Crisis Communication Centre consists of three main components with responsibility for the different parts of the crisis communication, namely the operators, the, Monitoring and Alarm Function and the Editorial Office.



**Operators:** the operators respond to the calls from the public on the different types of communication channels and gather and transmit the information and guidance from and to the public and the authorities. The operators are the backbone of the CCCs.

**Monitoring and Alarm Function:** this function detects and follows or monitors events and gathers data around the clock all the year. It has the capability to detect patterns and anomalies which may indicate that something has happened or is happening or that there are signs which indicate that a crisis may be on the way. The Monitoring and Alarm

Function also has the responsibility for alarming authorities and other actors in accordance with adopted guidelines and on its initiative, disseminate early warnings and information from authorities on danger and action to take to the public as well as issue alarms and warnings on its own initiative in the event of serious immediate danger. This function can also have the capacity for supporting and facilitating the collaboration between the authorities and other actors by providing facilities for telephone conferences with many participants and summoned participants to these through established call up systems. The management of the Officer on Duty system of the authorities and a close collaboration with these can also be managed by this function.

**Editorial Office:** this office assists the authorities in elaborating and updating the basis for the FAQ for an event, preparing the information to different groups and in different languages and conducts quality assurance of the messages and information to produce common messages from the authorities. The office is responsible for the national crisis website or portal and also in the CCC for the press contacts.

The administrators in the Editorial Office are experienced communicators and as a rule have a background as a communicator or information officer alternatively as a journalist. They, and also the administrators in the Monitor & Alarm Function, must have a very good knowledge about the society in general, its structures and ways of working and about the crisis management system and how it is organised and works, which the areas of responsibility and functions of different authorities and other actors are, etc.

Within the CCC there must also be a well organized service organization which can manage the necessary support of the three main and important components of communication service, for instance a function for quickly filling up with sufficient staffing with CCC operators in a crisis event,



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carry out planning for increased staffing also be-fore an event for which there is a certain early warning and ensure more long term en-durance with staff in a crisis with a long duration.

The CCC staff must also be supplied with necessary service when the burden of work is heavy and the operators have to remain on site for a long time. The CCC must have access to language interpretation and sign interpretation for communication with the public and translation service regarding the material for the FAQ around the clock and all the year. To achieve this, legal agreements should be made with interpretation and translation services. The management of the CCC is also important to ensure the strategic overview of the CCC and guarantee its functionality, promote necessary collaboration and decide on escalation of the service, when needed.

### **Information coordination between authorities**

Each authority will have its own responsibility for providing information and will have its own communication with the public, but it is of significant importance that this information is shared with the other authorities and other actors. The information about what is being communicated and which messages that are disseminated must be known by the different involved authorities and other actors. If this knowledge is lacking, the authorities risk for example to spread diverging information or even contradictory messages. Each authority must be aware of other authorities' actions and decisions.

There is a need for inflow of information from each authority to the CCC database to make the information as complete as possible and this inflow must be maintained continually through out the event. By having access to the overall picture, the work will be facilitated and the quality assured within each individual authority. The coordination of information between the authorities can also be achieved by active collaboration measures, for instance by organizing collaboration telephone conferences to share information and agree on certain common overall messages. Such conferences should be short and made efficient by established procedures and routines. Contact lists for personnel responsible for communication in a certain substantial area should be made available. The Editorial Office should be responsible for the coordination of information measures.

If there is a communication strategy which is common for the involved competent authorities, the possibilities for an effective and well concordant work on communication matters will increase. A part of such a plan was the establishment of a FAQ database with questions and answers which allows all the involved authorities to share each others' questions and answers and participate in the common elaboration of these.

### **Editorial Office**

One of the main functions in the CCC is the Editorial Office (EO), which works in collaboration with the involved competent authorities with the aim of improving the quality and accessibility of the information which is disseminated by the authorities to the public. This work will lead to making the information from the different authorities concordant and lessening the risk for divergent guidance and messages. By offering methodology, tools and resources for common information work between the authorities, the EO facilitates for the authorities to work in a coordinated way with the information matters and speeds up the information process.

The Editorial Office also assists the authorities in elaborating the basic material and up-dating it to the FAQ (frequently asked questions) in an event and for elaborating information for special target



## Mass Crisis Communication with the Public MASSCRISCOM

groups and in different languages and assuring the quality of the produced common messages from the authorities and for instance the FAQ can be prepared beforehand for being able to use pro actively by common efforts. Earlier experiences give a rough idea about what questions the public need to get answers to in different types of events. This collaboration between the authorities regarding common questions and answers to the public has been tested in Sweden on a number of occasions in events that have occurred. A coordinated EO and resources for this purpose has been found to be needed for the work

The screenshot shows the website Krisinformation.se with a header in Swedish. The main content area features a large image of a destroyed building in Japan with the title "Situationen i Japan efter naturkatastrofen". Below this, there are several text blocks providing updates and contact information. On the left, there is a navigation menu with categories like "Frågor och svar", "Följ läget i Japan", and "Svenska myndigheters ansvar". On the right, there is a section titled "INFORMATION FRÅN SVENSKA MYNDIGHETER" listing various Swedish agencies involved in the response. At the bottom, there is a "SENASTE NYHETERNA OM KATASTROFEN I JAPAN" section with timestamps and sources.

In the EO, monitoring of events and scanning of the information in media around the world is carried out daily, both under normal conditions and in crises. This is carried out with the perspective of the public in focus, i.e. how can the events that occur affect the need of the public for information. The administrators in the EO make a quick assessment of what the information needs are and how the information given by the authorities responds these needs. The “picture of the crisis” in media is not always the same. This monitoring can be made available for the involved authorities through the CCC database. As this task is undertaken continuously, there has been created an ability to follow



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an escalating crisis (from less serious to serious) and be prepared for an increased information pressure and a capability for shaping and adapting the information to the questions that are put, guidance that needs to be given or the anxiety of people.

The Editorial Office is also responsible for the national web based crisis portal for information from authorities to the public (see <http://www.krisinformation.se>) and for supplementary channels in social media

### **National web portal for crisis information**

An efficient and reliable communication channel in crisis events is a web portal which can serve as a common entrance to the crisis information of the authorities and can provide an overall situation picture of what has happened. Most people are now used to searching for information on Internet. To have one single website where information from the authorities and other crisis management organisations is gathered, irrespective of where the crisis has happened and who is responsible for managing it, means that finding the information that someone is looking for has been facilitated. People often do not know which authority is responsible for different matters.

This web portal should be managed by the Editorial Office which has a general view of the information needs and which, through the CCCs database and collaboration and contact with the responsible authorities, continually has access to relevant and verified information from the authorities.

By having this general overview and access to information, the Editorial Office can categorize, classify and gather information from outside for instance from different target groups based on the development of the event and different questions. The overview can be publicized on the web portal which will become a source for collected information of all involved authorities and other actors. The web portal should also contain a well developed search function to give the visitor the freedom to search for his own ideas and questions.

In this way, the web portal can also have the form of a situation picture over the current information and questions in connection with an event. Just as questions from the public are answered by the operators in the CCC, the gathered questions and answers can be published on a web based portal for crisis information. Responsibilities and references can be indicated on the web portal, which will serve as a supplement to the information which is provided on the information number, managed by the CCC.

A national portal for crisis information can present information in different ways:

- News which present what has happened and how the competent authorities are handling what has happened
- A description and explanation of the consequences and how people should react and what they should do. This can for example be done with guidance and check lists
- Highlights with the most important common messages from the competent authorities
- References to more information made available by competent authorities and other actors
- Questions and answers allowing people to search in an easy way for exactly the questions they wish to have answers to
- Clear warnings



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- Geographic division or possibilities to choose a certain geographic area
- Explanatory graphics and maps
- Contact information for authorities, health care institutions, police, etc.
- Descriptions of the responsibility of different authorities
- Factual texts
- Information for people with particular needs, for instance information in different languages, sign language, readspeker and text easy to read



It is also important to supplement the national portal for crisis information to the public with a possibility for a dialog and communication. Many people wish to call and speak to someone, others wish to ask questions and discuss the event on Internet. It will not then be sufficient to have only one-way communication, from authorities to the public. The information must therefore not only be available on a national crisis portal but must also in the most used social networks such as Facebook and Twitter or in the networks and media where people prefer to fetch information and also to communicate.

In the social media, people are given the opportunity to comment and ask questions and even give information. Such two-way communication and the opportunity for dialog also give the competent authorities the opportunity to get a picture of whether the information and guidance disseminated really reaches the public. Generally, the communication is still based on the verified information about the event which is accessible. The national web portal in social media maintains the same role. The editorial office refers to, presents news, informs about contact data, etc. but this could also be done in direct dialog with people or based on the way they are asking questions.



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# CCC System

## CCC model

The Crisis Communication Centre (CCC) model which has been elaborated by MASSCRISCOM will fulfil several functions at the same time, such as:

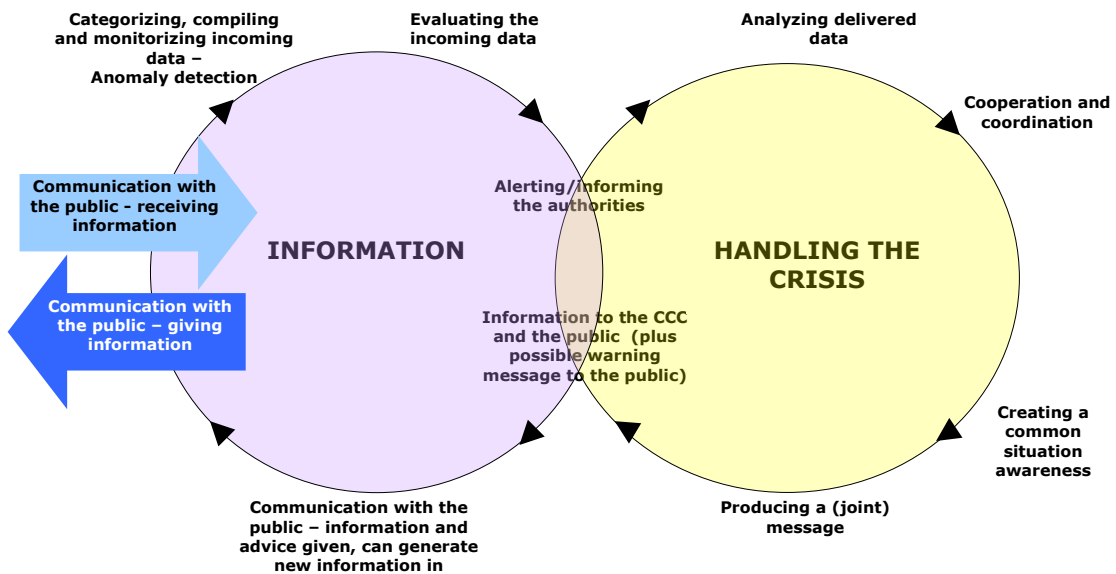
- serve as a contact point for the public in order to reduce the burden on the 112 emergency call number
- provide the opportunity for supplying the public quickly with information about current events and risks
- establish an opportunity for receiving information from the public about events that have occurred or observations that have been made
- provide a channel for compiled and coordinated information from authorities and actors to the public
- maintain a supply of material for analysis and detection of events, for instance detection of anomalies

## Communication and access to data

In order to fulfil these tasks and have the possibility of making a collected analysis, a large amount of data, both such data resulting from the activities and data from a number of other sources in collaborating systems, has to be accessible for the CCC, its operators and its analysis function. The exact functionalities, that the CCC will have, which quantities of data that will be available and how the CCC functionalities will be defined, will differ and depend on the conditions for having access to the data and which applications and choices that can be and are made when a function like the CCC is established. In the designing of a CCC, the question of how the system can get access to data will thus be fundamental and will be resolved differently, depending on whether the CCC will have its access by importing data directly to its own database or use an interface for getting access to the data from the original sources as well as on matters related to legal barriers to protect sensitive information.



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*The figure illustrates how two simultaneous processes are conducted by the CCC and authorities respectively, processes which to a very considerable degree exercise influence on each other and thereby also CCC:s and the authorities' abilities for managing the communication with the public in a satisfactory way during a crisis.*

In the following, the different amounts of data that can be integrated will be considered as well as where and how these amounts of data will be built up, how they will be used and if there are common characteristics, which should lead to them being handled in a similar manner. The amounts of data will therefore be available in parts in accordance with different standards. Already in the design of a new system, it is advisable to find out which different standards (expressions) there are to be for individual amounts of data and to define how these different standards are to be used or are to be converted.

**System for handling calls or files (seeking information/providing information)**

The contacts or calls from the public can be divided into two groups, those who are requesting information and those who wish to provide information. The received information from the public about events or observations is one of the basic elements for an analysis and assessment of the whole situation and discovery of anomalies, which can be used by authorities for early detection of events or crises under development. It is also a direct source of information about the event which can be forwarded to an appropriate organization as information and for action to be taken. The questions received by the CCC can furthermore be a basis for analysis and detection, for instance a sudden increased amount of questions regarding a specific subject can indicate that something has happened or that an event is under development. Every received contact by the CCC must be treated as a file and all relevant information such as site, subject, time, etc. must be noted as part of the information basis in the CCC and in the file documentation.



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## Structure/components

A system for handling calls or files must consist of components and software which will give opportunities for:

- supporting the CCC operator when making an interview with an index in the form of prepared questions for different types of events which in their turn generate new questions
- giving valuable guidance through guidance support linked to the interview support in which guidance for different types of situations can be found
- adapting in a flexible way the interview and guidance support instantaneously to the crisis that has happened or is threatening to happen and what message the competent authority wishes to convey
- positioning the encircled area and the position of the event in digital mapping linked to the system for handling the files
- receiving pictures and film sequences of an accident, event or crisis
- structuring and documenting the received information as well as defining the information in categories and under-categories in the system for handling the files and the digital mapping linked to this
- being able to communicate and receive files through text-mail (social media, e-mails, SMS, etc.) and directly from the system for handling the files and alternatively being able to transfer the contents from the system to other text media and vice versa

## Support for interviews and indexes for guidance

An interview support system has large benefits in making it possible for operators to handle effectively the predictable crisis situations that can occur. To train CCC operators to be able to handle all types of crises, i.e. which questions to put, which guidance to give, etc., takes a considerable amount of time and this knowledge needs to be maintained after the training. It is in the nature of a crisis not to occur frequently and it is not possible to, for example, train an operator specifically for a nuclear accident which perhaps never will occur. Instead, such knowledge can be prepared and be made available for operators in an index in the system as support to the interviews. The index contains a set of questions and guidance linked to the type of incident. The index will be prepared in collaboration with the CCC by the authorities responsible for a certain type of crisis on the basis of their existing competence and expert knowledge.

In this way, the CCC will be able to handle a crisis that happens, in any case if it is predictable. If this is not the case, then there will be an "index for other situations" available containing general questions and guidance.

An index thus provides support with guidance and has the following advantages, namely that it:

- offers support to CCC operators
- provides a structured way of gathering information
- ensures that the correct questions are asked
- ensures also that the correct advice and information is given to the public



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- provides a basis for giving information to and receiving information from the authorities
- makes it possible to prepare in advance questions and answers for different types of crises.

The incoming communication must contain information regarding:

- what has happened/why contact has been taken
- the sender/source (name, authority, etc.)
- telephone number, e-mail address, etc. of the source
- address/description of the site of an event or where the sender is located
- the location/position of the sender/crisis
- the time of communication
- the time of the event/observation
- a description of the accident/event/crisis
- the possible risks/dangers in the opinion of the sender
- pictures/film sequences of the accident/event/crisis
- if there is an agreement on continued communication and on which communication channel the sender prefers to continue the communication

An example from the operational platform Zenit of SOS Alarm, in which the index has the form of a question and guidance support for the SOS operator and which gives opportunities for handling many types of events, also such events which do not occur frequently.

The aim should be to receive the information regarding the sender as far as possible automatically, for instance through automatic telephone number identification of the call and indication on the number presentation, automatic positioning, etc. This will facilitate matters for the operator and will verify the sender.

The question related to the sender's identity will have to be managed in accordance with the legislation in each country. It is however important for the CCC to always be able reach the person, by whom the call was made, to ask supplementary questions and receive new information in urgent situations. The authorities who will receive the information from the CCC are probably generally not interested in having



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the contact information or the name of the individual sender but are instead more focused on the situation in general.

On the basis of the received information and possible need for urgent help, the CCC operator will have to take position to a number of questions, such as:

- Should information be gathered or should information and guidance be provided, or both?
- To which category does the accident/event/crisis belong?
- Which priority should be given to the call?
- Which is the possible area of risk?
- Should any authority be informed?
- Should emergency response units be alarmed/dispatched?

### **Frequently Asked Question(s) (FAQ)**

Different types of Customer Relationship Management (CRM) solutions are nowadays used in call centre services. In the Swedish call centre company YouCall, which is a subsidiary of SOS Alarm, there is for example a flexible system called Lime which makes it possible to connect to it a Frequently Asked Question(s) (FAQ) database. The content of this database is produced by the competent authorities and is introduced easily when it is ready into the database. As questions come in from the public, new answers are elaborated and introduced into the FAQ. These answers can also be made available on the websites of the authorities. It is easy to extract statistics from the system which makes it possible for the authorities to permanently get a good overview of which matters involve the public most of all.

### **Basic characteristics of an event**

In the analysis and the handling of the file by the CCC, certain basic issues and characteristics in the information will be of fundamental importance for finding the correct information and making the correct analysis of an event, for example:

- Something has happened/been reported somewhere at a certain time
- A person is wondering if there is something which can affect him there and then
- An analysis indicates that a certain question/observation has started to be put/reported in a certain area and recently

The geographic location or magnitude of events/matters or their duration/period of validity over a certain amount of time and their nature (i.e. category/type) will thus be important elements in the analysis and detection of anomalies in the contacts with the public.

### **Defining the geographic location or area**

The prospects of searching for information in the database on the basis of the information's localization to a certain geographic or substantial area will be a prerequisite for being able to handle the large amounts of data in the database in a functional way. An operator must for instance be able to grasp what type of matter that the person making the contact is affected by. To do this it is necessary for the operator to determine the relevant geographical area (and for example indicate this area in



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a mapping inter-face) and to understand what the affects are. The same principle is applicable in the analysis. To enable this, two conditions must be at hand:

- the database must be adapted to spatial analysis and have GIS functionalities, i.e. the database should most probably be built on or have functionality from a GIS platform/database
- all data which is put into the database must be defined geographically to make spatial analyses possible

Many events or quantities of information have a natural geographic domicile such as the type of area that is relevant and where they are located or have occurred. Data of more administrative character which do not seem to be possible to define to an obvious geographic attribute may for example get it by being allocated geographically to be relevant for the whole country or any other appropriate administrative area which can be transferred to a geographic area.

It is important in the creation of systems for the CCC to be open for present and future possibilities for positioning geographically contacts, for instance by using GPS positioning of mobile telephone calls.



*An example from the digital map, called ResQMap, which is used by SOS Alarm in Sweden. The scenario used in this example is a flooding event.*

To position the sender has become easier due to the very fast development within the telecom services. The advantages are evident: by positioning the sender, the CCC operator can quickly see by looking at his map if a number of calls have already come in about the event and it is easy to get an



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overview of the geographic extent of an event. When an authority gets information forwarded to it from the CCC, the position of the event is indicated and there is also an overview of the extent geographically, the amount of affected people, etc.

### **Defining the time (for an event and its duration)**

The time of an event and receipt of information must be indicated. This is a condition for the analysis, and therefore the exact time for each contact with the public and the event or report and its duration must be documented. Certain information has as a rule a precise time for instance warnings and information messages which have been issued. For other information, for instance events which have been reported, it can on the other hand be more difficult to determine for how long the information is interesting. This can depend also on the type of event. When a CCC is created, the question of how different time aspects for various types of information are to be handled needs to be decided.

### **Classifying/categorizing and tagging**

There will be different ways of classifying and categorizing the information to be included in the database. For some information, a strict standard will be applied and applicable to define clearly to which category and type the information belongs. The information in the CCC will on the other hand for example be entered into a hierarchical system for categorizing, which will follow the questioning procedure or index to support the operator in the interview. Other information may be completely without classification or categorisation or have free tagging as the basis for assigning it an appropriate term. Most probably, it will not be possible to achieve a complete system for classifying and categorizing or tagging of all data, and the system will therefore have to be designed to be able to handle different forms for this simultaneously. This is in particular the case for the interface between analysis and searching for data.

### **Categorizing of files – types of files**

The information which is received through the communication channels will be categorized by the CCC operator in predefined types of files. For each type of file, there will be prepared questions and answers and guidance. The nature of a crisis is that it does not occur frequently and, to enable the CCC operator to be prepared and be able to handle different types of crisis situations in a professional way, the prepared questions will provide the operator with a support to enable him or her to ask the correct questions. The guidance connected to each type of file will be of a fundamental character and is to be provided to the caller.

The categorizing into different types of files also provides an enhanced ability to connect different inflows of information to each other and is a condition for the automatic detection of anomalies which will be carried out. It is also necessary for being able to make the selection of the information which is to be forwarded to the relevant competent authorities. The categorization furthermore offers good opportunities for compiling useful statistics.



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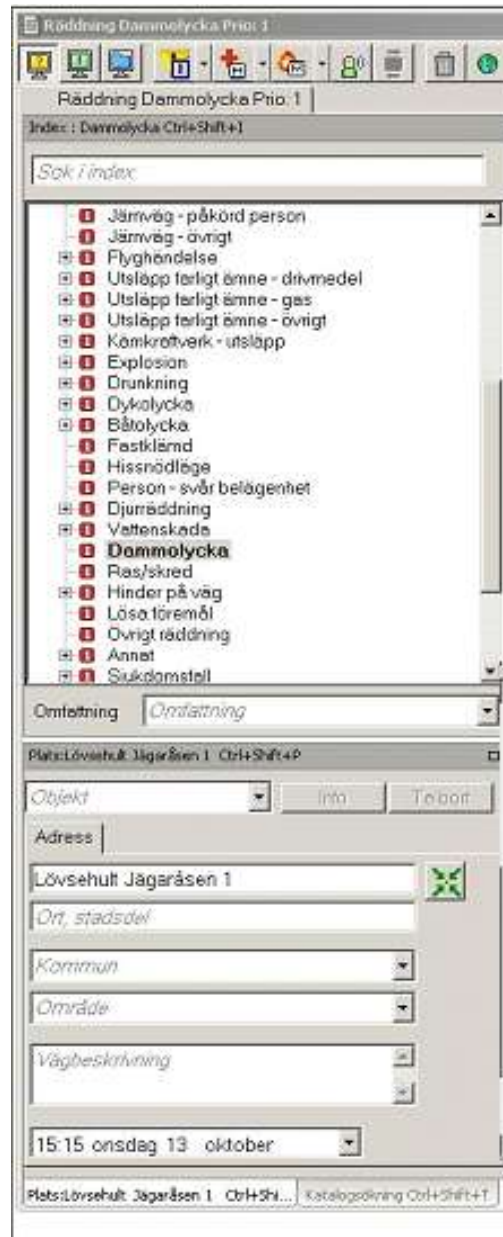
An example from the SOS Alarm's operational platform Zenit, in which the filing system contains a spectrum of different categories/types of files, which in their turn have sub-categories. To this is connected both a plan for dispatching response resources for instance fire and rescue services and a question index and guidance.

### Communication with people with hearing impairment

A group of people with particular needs, which can be difficult to reach and communicate with, are people with hearing impairment. To send information to this group through the traditional channels, sirens, TV and radio which require that the receiver can hear is not satisfactory and to rely on using the telephone alone is not possible. A considerable benefit would be reached if the CCC can communicate on social media but it must also be possible to use the same channels as those used in general including the telephone. The CCC will thus be able to use all available means for communication with people with hearing impairment. The existing systems in use consist of communication on text telephone and facsimile but these are becoming out of date or obsolete.

In several countries, it is now possible to communicate with the 112 emergency call system on SMS. At present, services for communication between people with hearing impairment and the 112 system which will use multimedia, i.e. communication by sound, picture and text simultaneously in real time, are being developed and a pilot test is being conducted within the EU REACH112 Project, under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Programme of the European Community.

This new service under development for communication between people with hearing impairment and the 112 by using multimedia with equipment for "Total Conversation" will make it possible to see the 112 operator, write and read real-time text and see sign language interpretation, as the communication between the operator and the person seeking help will be interpreted. The person seeking help can on the screen see the operator, what he or she writes and simultaneous sign interpretation and vice versa. An open standardized solution is used.

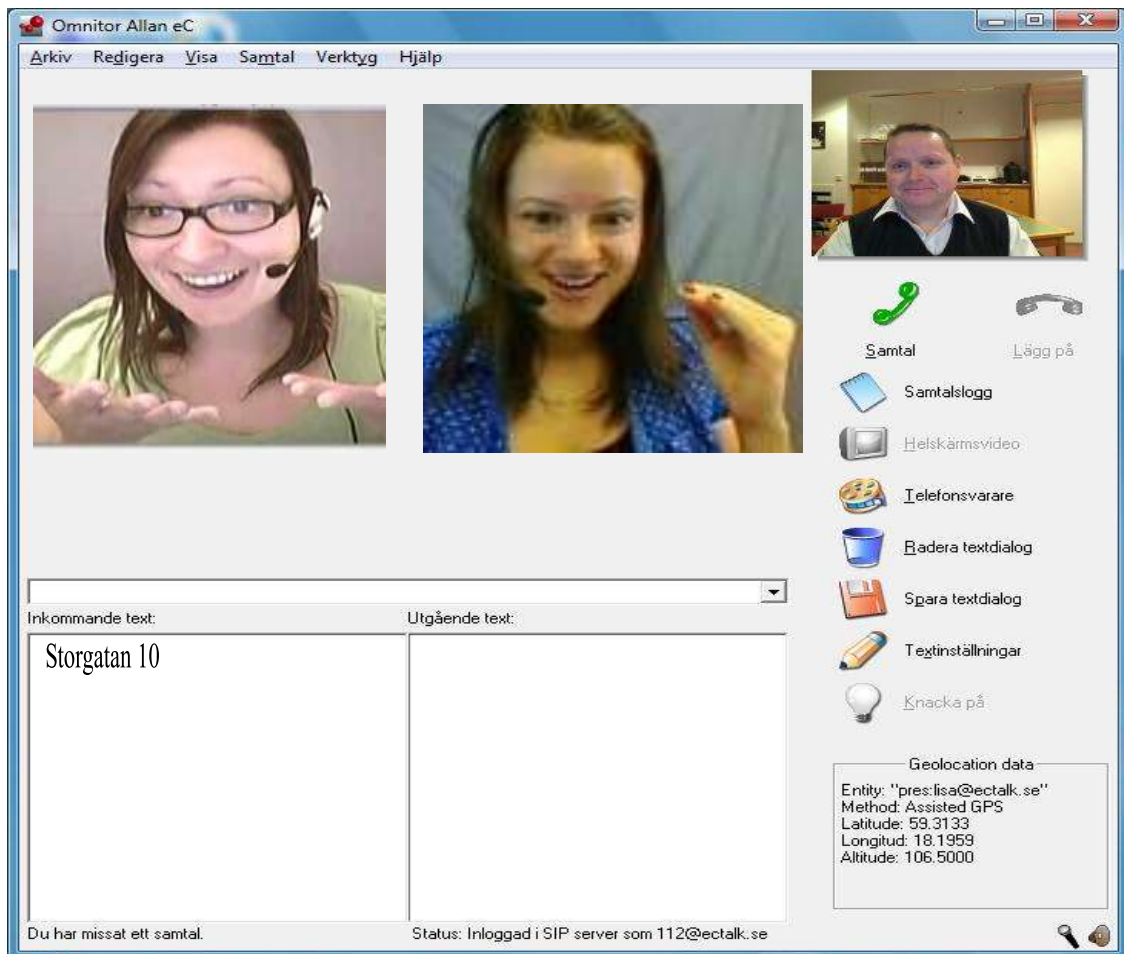


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Picture (montage) from the operator's point of view. The person in need of help to the left, the sign interpreter to the right and an operator from SOS Alarm in the small picture to the far right.

## Contact point for volunteers

A functionality which can be considered is to have a point of contact in the CCC for people who are willing to help on a voluntary basis in a crisis. The US 112 call number had positive experiences of this in for instance the recent hurricanes. The CCC would then have the task of receiving the offers and registering the volunteers and transfer this information to the competent authority.

## Contacts with CCCs of neighbouring countries

To optimize the gathering of information and monitoring of development in general, collaboration should be established with the CCCs, or the equivalents to this, in neighbouring countries. Weather related events are examples of a type of event which can affect several countries or move gradually



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across national borders. When the thunderstorm Derecho on 8 August 2010 passed from Latvia, through Estonia and into Finland within a time period of about three hours, the consequences in Estonia might have been reduced if an early warning had been received beforehand from Latvia. In a similar manner, Finland could have been warned by Estonia about what was under way. A CCC could thus have an international entrance point for these types of events and have a responsibility for giving an early warning to neighbouring countries' CCCs or a designated authority or other actor.

### Information database

The incoming communication or contact from the public can be divided into two groups, the first consisting of calls from people requesting information and the second consisting of calls from those who wish to provide information. The information provided by the public to the information database about an event or observation serves as a basis for the analysis and detection of anomalies which can be used by the authorities to become aware at an early stage of an event which is under development and also serve as a direct source for information about events which can be forwarded to the appropriate body as information and for action to be taken.

Also questions to the CCC can serve through the information database as a basis for analysis and detection as a sudden increase of questions regarding a certain subject can be an indication that something has happened or that a situation is under development. Each contact with CCC must be treated as a file and the relevant information about the location, subject, time, etc. must be noted in the file as information to the CCC and for the handling of the file as such.

### Quantity of information

The CCC operator must have access to information from different sources to be able to fulfil the duty in respect to the public and caller, for instance to be able to give information that the event is known and being addressed. To enable analyses and detections of anomalies to be made, the basic CCC database must be supplied with information from different sources dealing with activities and questions which can be an early indication that something is happening or under way. The following list of sources of information is not complete and the amounts of information will also vary depending on the ambition of a CCC and the structure of these systems in an individual country:

Information created in the CCC system:

- Files of events which have come in through the CCC
- Answered questions in the CCC
- Information directly introduced into the CCC system:
- FAQ (coordinated information from authorities and other actors)
- Press releases
- Other information disseminated to the public
- Information gathered from other sources:
- Alarms on the 112
- Files after emergency calls



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- Questions to the health information service
- Important message to the public (VMA)
- Weather warnings
- Hydrological warnings
- Information regarding important infrastructure services
- Road traffic information
- Other traffic information
- Data from different sensors, for example fresh water quality control
- Analysis and detection

One of the basic ideas of a CCC is that it should be able to get information from the public which will make it possible to discover that something has happened or is happening, something which perhaps has not yet led to serious consequences or an alarm but has the potential to do so. By detecting a beginning event at an early stage, the response to it can start earlier and possible negative consequences of it can be limited or prevented.

One of the basic ideas of a CCC is that it should be able to get information from the public which will make it possible to discover that something has happened or is happening, something which perhaps has not yet led to serious consequences or an alarm but has the potential to do so. By detecting a beginning event at an early stage, the response to it can start earlier and possible negative consequences of it can be limited or prevented.

A wide range and large amount of information about events, observations, alarms, warnings and questions should therefore be collected in the database to improve the possibility for analyses and detection of anomalies. The total knowledge and information about observations in the database should be as large as possible.

The analysis and detection will be carried out by a subordinated or adjacent unit to the operators in the CCC, the Monitor and Alarm Function. Its task is to scan and analyze the gathered information and carry out so called data mining to detect patterns and anomalies which may indicate that something has happened or is happening.

The analysis unit will compile and forward notable observations to the relevant actors and will also assist these by conducting analyses and searching for certain information in the database on request.



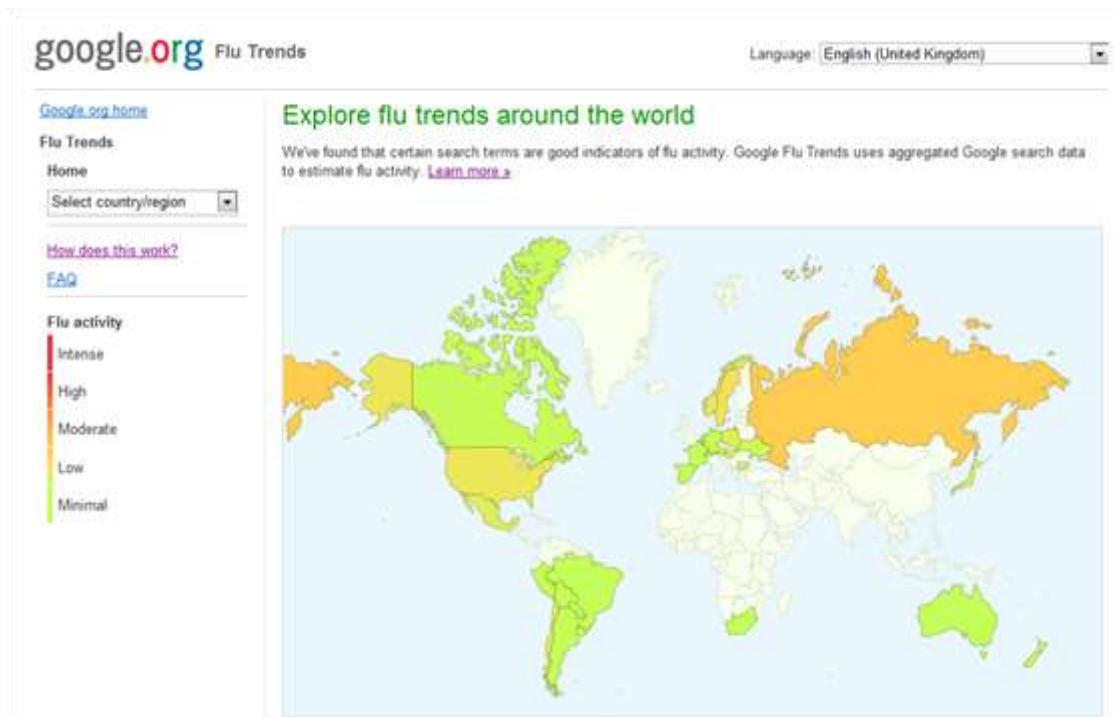


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### Data mining

By data mining is meant in this context the process for searching for and extracting patterns and facts from large amounts of data in response to certain defined issues or problems. The analysis section will have a number of predetermined questions at issue for which an alarm should be given or triggered when something appears within the determined question at issue. A question at issue for data mining can also be provided by or initiated by authorities or other actors which can give tasks to the section to carry out data mining. Data mining is a regular tool used within business intelligence for in-stance for marked studies. An example of how analysis and search based on relative phenomena of large amounts of data can create or extract or illustrate new information which otherwise would not be given attention is Google Flue Trends.

Within MASSCRISCOM, a number of symptom related words were identified. How frequently these words were used for searches was then compared with reported medical statistics and the results were that there was a very good correlation between the frequency of search for these words and the recorded amount of influenza.



Statistics used for influenza and changes in it can therefore be used to determine the amounts of influenza cases in a geographic area and detect early changes. This methodology could serve as a source together with other sources for the authorities in building a situation picture.



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## Detection of anomalies

By detection of anomalies is meant methods for data mining to find patterns which are not known or anticipated. The technology and methodology or algorithms for this are for example used in traffic surveillance both physical traffic and electronic traffic. Well developed technology for detection of anomalies is of fundamental importance for being able to see in the very large amounts of data changes and events under development but which have not yet led to damage or injuries or alarms.

In order to determine the parameters for detection of anomalies it is necessary to have access to as much data as possible from as many different sources as possible. The more data that is available, the easier it is to detect anomalies. A careful analysis and determination of parameters must therefore be made to make the detection of anomalies as correct and reliable as possible. For instance, how many traffic accidents have to happen in a limited area to make it clear that there is an anomaly? And what other data should be added to give an overall picture of the situation?

Weather conditions can also be examples of such data. The forecasts that there will be heavy snow together with strong winds which turns out to be correct together with a number of traffic accidents and data on the amount of cancelled trains and flights, indicate an approaching crisis which may paralyze the infrastructure. On the other hand an event which seldom occurs is difficult to determine an anomaly detection parameter for.

Another example was the outbreak of a stomach disease in November 2010 affecting several thousands of people in the town of Östersund in Sweden, which turned out to be caused by a intestine parasite, *Cryptosporidium*, in the drinking water which could not be used for drinking purposes before having been boiled until the middle of February 2011.

The Swedish National Food Administration has as a result of this event started a project to be able to detect similar outbreaks at an early stage and issue warnings. In cooperation with the Swedish Health Care Direct 1177 (Sjukvårdsrådgivningen), a 24 hour health care advice service, the National Food Administration is now going to carry out a pilot program of daily national surveillance of gastroenteritis. The incidence of phone calls to 1177 regarding gastroenteritis is about 0.04 per person and year. Theoretical and retrospective analyses of the data, i.e. daily calls between 2006 and 2010 with geographical resolution at the level of parishes, show consistent detection limits of water- and food borne outbreaks of about 100–300 cases in populations about 25 000–50 000. Many factors influence these limits; the population size and the query rate being the critical ones; "query rate" referring to the proportion of 1177 calls among people with gastroenteritis. The anomaly detection in this case is planned to compare the normal call statistics regarding gastroenteritis (e.g. stomach pain, nausea and diarrhea) on calls to 1177 to:

- the number of calls to 1177 regarding the specified symptoms in a geographic area, in a certain time lapse
- key word searches on the Internet
- sales of anti-diarrhea at Swedish pharmacies.



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## Spatial analysis

The tools for data mining and anomaly detection must be fully adapted to be able to make special analyses as the geographic component in many cases can be of vital importance for interpreting the material.

## Presentation and reporting

In order to make the information, which is extracted from the database, used in practise, the information must be processed and presented in a way that is understood by the crisis management users. The methods and tools for presentation and visualisation of information are under constant development. An important competence to have in the CCC analysis unit will be the capability for clarifying facts and the whole situation with the support of tools for reporting and visualization of information.

## CCC Staff

A CCC operator must have a high level of competence and capability in a number of areas such as being able to:

- receive incoming information and communications on all the different channels, i.e. telephone, Web based social media, e-mail, SMS, etc.
- provide the public on these channels in a structured and credible way information which is verified by the authorities or information which has been elaborated and prepared beforehand for different types of events
- collect all relevant information for the authorities by conducting complete interviews irrespective of the type of event
- handle the CCCs file documentation system including the mapping function
- communicate in a service minded, sensitive and emphatic way with the person seeking contact and be able to create a feeling of security for the person making the call

A CCC operator must also have a good knowledge of the structure and organization of society and know which the relevant actors and competent authorities for crisis management are as well as their areas of competence/responsibility and roles in the crisis management. A relevant training of the CCC operator should contain elements such as the following:

- Interview methodology
- Good knowledge of the different parts of the CCC system
- Education in social science with a focus on the actors, organizations and authorities which the national crisis management system consists of
- Geography and mapping knowledge
- Training in the handling and conditions for using the different channels for crisis communication
- Knowledge in the field of crisis psychology



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The training of a 311 operator in the United States is 4–6 weeks (varies in different parts of the US) and this is supplemented with different periods of introductory training and guidance. The police 911 education and training in the Austin Police District in Texas is for example 40 hours in the class room, followed by 80–120 hours of supervised work. When these operators have worked for some months in the 911 service, then they are trained also for the 311 service, a training which consists of 40–60 hours.

A SOS Alarm operator dealing with 112 calls in Sweden has about 5 months of education and training to be able to handle 112 calls and dispatching units. An emergency call service operator in Finland has about twice that amount of education and training.

## Escalating the CCC capacity

The CCC must have the capability to escalate its capacity and staffing immediately to be able to handle all types of crises, both those that happen and escalate quickly and those that develop slowly. It is not reasonable or feasible to always have such a large amount of CCC operators on duty that there is a constant capacity for being able to meet all the needs of the public without any delay.

One possible solution for reinforcing the capacity quickly is to make use of existing resources and personnel available at short notice in society, for instance in the municipalities, authorities, voluntary organisations and other information number services. An exceptional strain during nighttime will also require the possibility of involving other relevant actors, for instance different call centres in accordance with reached agreements, as they also provide services outside office hours, in order to manage the situation by escalating the capacity and staff in a short time. Another possible solution is to involve personnel (telephone exchange, information and administrative staff) in municipalities, public authorities and different voluntary organisations after training in not affected areas of the country.

There are good examples of implementing such solutions from the information number 211 service in the United States, which is managed and staffed by volunteers. The Red Cross in Finland can also staff an information number quickly with trained volunteers which can in addition carry out door-to-door visiting and information activities as an alternative if electronic communications are out of order. Another group that could be involved is university undergraduates.

Establishing preparedness for the escalation is very important and for this purpose there must be established a network of appropriate designated authorities, municipalities, etc. and the functions and persons in these must be selected and receive adequate training for their participation. They must also be provided with necessary equipment to enable them in a crisis to quickly step in as a CCC operator. Collaboration must be established with the appropriate voluntary organisations and the same procedure be carried out with these, i.e. voluntary persons must be selected and receive adequate training, and furthermore the same preparatory actions should be taken in relation to private call centres and other suitable enterprises in the private sector.

In order to manage a fast escalation, virtual technical solutions must be used and the persons, who become involved as a reinforcing CCC operator, will be connected to the CCC by logging in the computer or telephone network at work or home or wherever the person may be located. The Swedish 112 organization has a service with a religious counselor on call which works in a similar man-



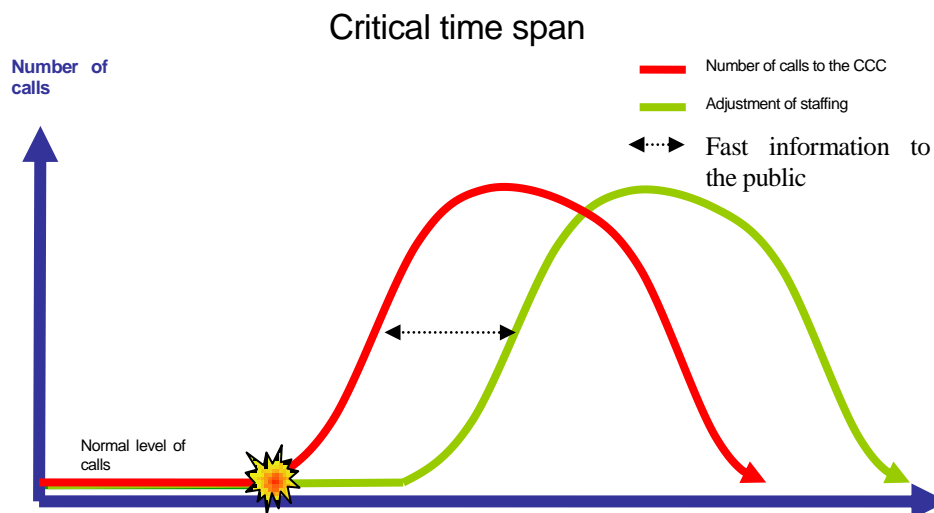
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ner to this, i.e. there are religious counselors on call in twelve areas of the country and these can log themselves into a virtual centres solution. Once they are logged in, then calls will be transmitted to them. In very large events, a considerable amount of operators could be connected in the same way and be ready and prepared quickly to communicate.

Each person in the network must therefore have appropriate equipment, computers with the software needed installed and access to the CCC system, telephone, etc. at his or her regular workplace or at home, if the solution with personnel on stand-by at home is chosen. The time used by the personnel to travel to the CCC localities is thereby avoided and the personnel can instead log in quickly and start crisis communication work directly. In certain events, it will anyway not even be possible to go to the CCC premises due to for instance flooding, snowstorms, etc. On the other hand the telecommunications may in certain events become cut off in large geographical areas and the virtual operators in these areas will then not be able to reinforce the CCC, but failure of the telecommunications can just as well occur in the area where the CCC is located.

In order to be able to inform and put the network into action quickly, a system for summoning the personnel is used. The system consists of prepared messages and pre-programmed contact routes to the personnel and through these only some simple commands are needed to disseminate an activation message. Such a system is already at present being used by SOS Alarm in Sweden for summoning its personnel when needed. It has also the benefit of making it possible for the called person to send back a receipt of the message through toggle selection and inform if he or she can or cannot come on duty.

In the US, the 911 number operators will to a certain extent be used to respond to the 311 calls, when they have time enough and opportunities for this. Similar solutions can work also in Europe. There could in other words be certain collaboration between the CCC operators and those who staff the country's different Emergency Response Centres. The ERC operators, which are not directly involved in the crisis and not needed as support to the ERCs which are handling the event, can step in and assist the crisis communication number. And vice versa, the 311 number operators can after training assist 911, which creates an increased capability for coping with mass call situations.



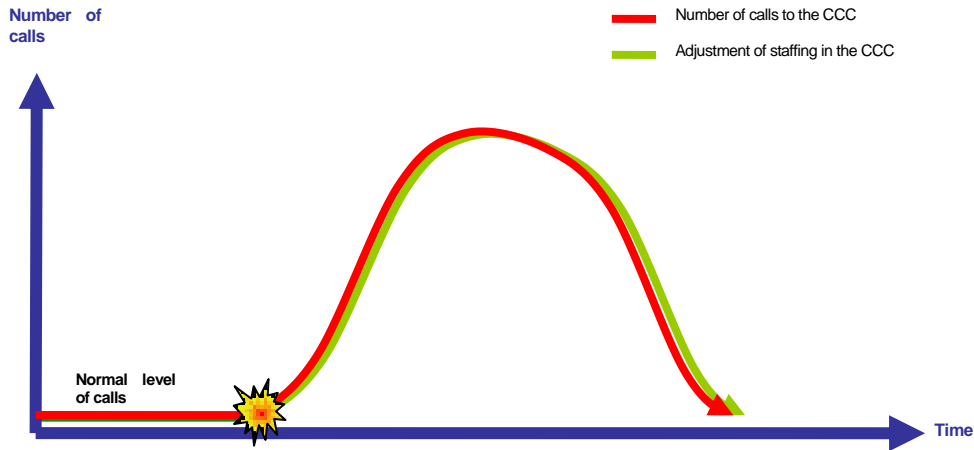
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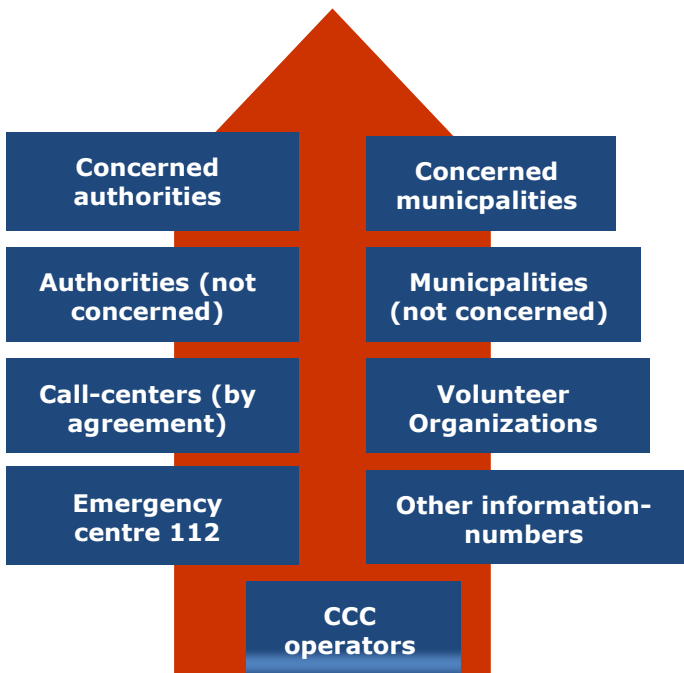
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### Preferred span of time



The figures indicate the time gap, which always will arise between a quickly increasing number of calls in a crisis and the time it takes for the CCC to quickly scale up its activities. The ambition must be that the time frame will be as short as possible.

The virtual CCC operator must himself through his connection be able to get an over-view of the situation through an inter-face before he starts to respond to calls. The CCC should be equipped with systems making it possible to see in real time how many and which persons that are logged in and handling calls simultaneously, the amount of calls by telephone, SMS and e-mails that are waiting and the response and handling time and other vital information. To be able to see the burden of communication through social media is most likely more difficult, but desirable.



The figure demonstrates the escalation process when a mass crisis situation arises in the CCC and how an increased number of officers from other designated organisations are needed quickly



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A CCC must also be dimensioned and have capability for being able to manage the need for crisis communication during a longer period of time. Such a period is usually in the crisis context indicated as one week, but events such as the tsunami in Asia in 2004 and the earthquake in Japan on 11 March 2011 with the following tsunami and problems related to the nuclear plant indicate that a CCC must be prepared to act as information carriers under a much longer time still, perhaps up to one month. The event as such was in the first case over in a short time but the follow up work, for instance the task of taking care of and identifying injured and fatalities, took a long time.

## Tasks of CCC under different phases of the crisis

The CCC has a role to fill in all the phases of a crisis, before, during, under, directly after and during the recovery phase. In the following figure, a specification of a number of the activities for the CCC during the crisis can be found.

Before	During	Directly after	Recovery
Information to the public about: <ul style="list-style-type: none"> <li>- possible evacuation</li> <li>- expected extent</li> <li>- how to prepare</li> <li>- where to shelter</li> </ul> - Preparatory contacts with individuals with special needs <ul style="list-style-type: none"> <li>- Preparatory contacts with business enterprise</li> </ul> -Outreaching activities: contacts with special groups; congregations, societies, radiochannels for cultural/ religious groupings <ul style="list-style-type: none"> <li>- Serve as a contact point for volunteer organizations</li> </ul>	<ul style="list-style-type: none"> <li>- Gather information from the public and other sources, monitor it to detect threatening potential crisis</li> <li>- Mediate information from the authorities to the public swift and precise</li> <li>- Give advice to the public in different kinds of crisis situations</li> <li>- As quickly as possible alert concerned authorities at a potential crisis</li> <li>- Provide a sense of security and calmness</li> <li>- Identify individuals need of help and relay this to the concerned resource</li> </ul>	Gather and mediate information about: <ul style="list-style-type: none"> <li>- Missing persons (relatives, friends, colleagues)</li> <li>- Help needed, e.g. with getting rid of debris, clearing roads, etc</li> <li>- reports of damage to property and the extent</li> <li>- power failures, when to expect electricity back</li> <li>- when means of transportation are available</li> <li>- where to find important service; fresh water, open food stores etc.</li> <li>- if one can return home</li> <li>- mediate contact with social service, the church, municipality etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Administer disaster relief, e.g. economical</li> <li>- Register claims for economic compensation</li> <li>- Feedback to the public and the authorities</li> <li>- Follow up of the experiences</li> <li>- Evaluation of the CCC:s work during the crisis</li> </ul>

### Contributing to a safe and calm atmosphere

One of the most important tasks of the CCC operators is to convey to the public a feeling of safety and calm and thereby reduce the worry in society when a crisis is threatening to occur or during a crisis. In 2004 when several hurricanes hit the coast of Florida and made the crisis management there subject to severe tests, two important experiences of the 211 information number were learned:



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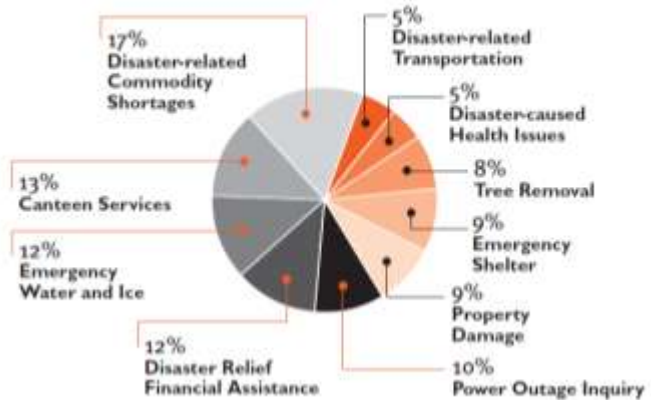
- People who had already received information on TV about where to take protection, what to bring along, etc. still called to hear the same information again from a human being
- Many calls were from anxious persons who just needed to speak to someone, to get consolation.

There are great opportunities and benefits to be reached by giving the public advice on how one can help oneself in a disaster.

The common denominator throughout the phases was the clear need that callers had for reassurance.

Call Type	Count
Disaster-related Commodity Shortages	710
Canteen Services	485
Emergency Water and Ice	450
Disaster Relief Financial Assistance	445
Power Outage Inquiry	392
Property Damage	334
Emergency Shelter	331
Tree Removal	326
Disaster-caused Health Issues	208
Disaster-related Transportation	177
TOTAL	3,858

Disaster-Related Calls in Orlando From August 12 through 19



Figures from the study *Trial by Wind and Water: How 2-1-1 Played a Vital Role During the 2004 Florida Hurricanes*, commissioned by United Way of America, researched and written by Dr. Kenn Allen, President of the Civil Society Consulting Group LLC in Washington DC.

Irrespective of the large amount of communication channels that are available, the tele-phone most probably remains the foremost means of assistance because a human voice answers. But also the fact that it is possible to use many different channels and a medium of ones own choice presumably creates security. It is however always important that the information which is given is reliable and that a call is responded to within a reasonable time when people need to get in contact. If the public does not get a reply to their telephone calls, e-mails or attempts to get in contact on social media with the CCC then the effect can be the opposite.

## Time aspects

### Response time – service level

The quality of a service centre is defined inter alia by how quickly incoming calls are responded to. The “Standard Service Level” (SLS) is usually used in literature for this qualification and is expressed with two values. 80/20 indicates for instance that the goal is that 80% of the calls are to be responded to within 20 seconds, which has come to be seen as a standard for call centres or an average for the time in which the calls can be responded to with reasonable resources.



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For the information number 311 in the US, the SLS goal 90/30 has been set, i.e. that 90% of the calls have to be responded to within 30 seconds. The information number project D 115 in Germany has set 80/20 as a goal for the future, but started with 75/30. The Emergency Response Centre Administration in Finland has set the goal 90/10 for responding to 112 calls and also 95/30, i.e. 90% of the calls must be responded to within 10 seconds but also 95% of the calls must have been responded to within 30 seconds. Both goals are now reached.

20 seconds is probably understood as reasonable also by a caller. It is equivalent to the time it takes for the three first signals that can be heard before the call is answered. In a mass call situation, it will be necessary to accept for a short while, before full escalation of the service has been achieved, a lower service level for a CCC. Also communication through social media must be handled with the same response time. In the cyber world, the expectations are that there is direct accessibility and, for a CCC or authority to have credibility, it is important that there is immediate accessibility to communications through web-based media.

### **Time for handling the call**

The time needed for handling and responding to a call go hand-in-hand, if unlimited resources in the form of CCC operators are available. This simple formula can be expressed as – the shorter the time is that is taken for handling calls = short response times. To define an expected handling time for a call is however impossible. There are too many different facts and parameters involved, for instance the type of incident, its size, the amount of calls, etc. And also soft values, such as the task of the CCC to create a sense of security among the public, which makes it necessary to allow a call to take the necessary time to reach this objective.

Communication through social media, SMS and e-mail can be a benefit in this context and has the advantage of making it possible to communicate with several people at the same time, which saves time. The CCC can thus disseminate information to many people at the same time and refer to a website for more information.

### **Time needed for establishing contact with the relevant competent authority**

The aim of the CCC is to convey as fast as possible relevant, useful and precise information from the public to authorities and vice versa. If the public is to have credibility in the CCC as provider of information, this will require that the information is disseminated quickly and the CCC always “knows best”. Mass-media are extremely fast nowadays in putting news on their websites and compete with each other in being the fastest but also perhaps in having the most correct information.

It is therefore of utmost importance that the communication channels between the CCC and the authorities use well established routes and that there is always a responsible officer on duty in each authority, who is permanently accessible and can supply information and guidance from the authority, which can be provided to the public. The same requirements apply when several competent authorities have responsibility in an event and need to collaborate, i.e. that such collaboration is achieved and enables common information to be distributed to the public.



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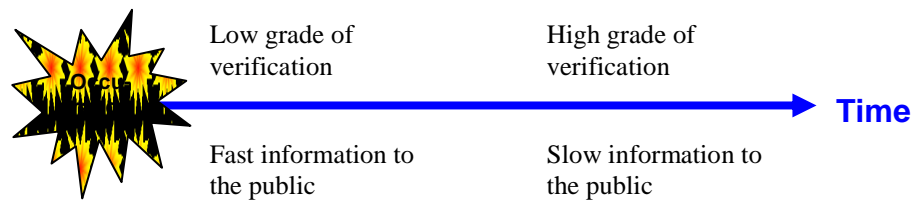
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A difficult balance must always be maintained in crisis communication between the need for disseminating information quickly and at the same time ensuring that the information is verified. The ideal situation, which is also expected by the public, is that the authorities always disseminate verified information (= reflecting the real situation) quickly in an event. It is however most often difficult to get a complete overview quickly of what has happened and what actions that are to be taken.

This is illustrated in the following figure:

### The authorities information dilemma



## Communication using SMS

Communication can and should be carried out on many different channels, but it is necessary to consider the different requirements when deciding how to actually communicate. Using SMS is for example more time consuming than speech as the text has to be written and it takes a certain time for the system to transmit the SMS message and finally it takes time before the message arrives to the receiver. SMS is also not prioritized in the mobile telephone system and can be an inefficient way to use for a longer communication.

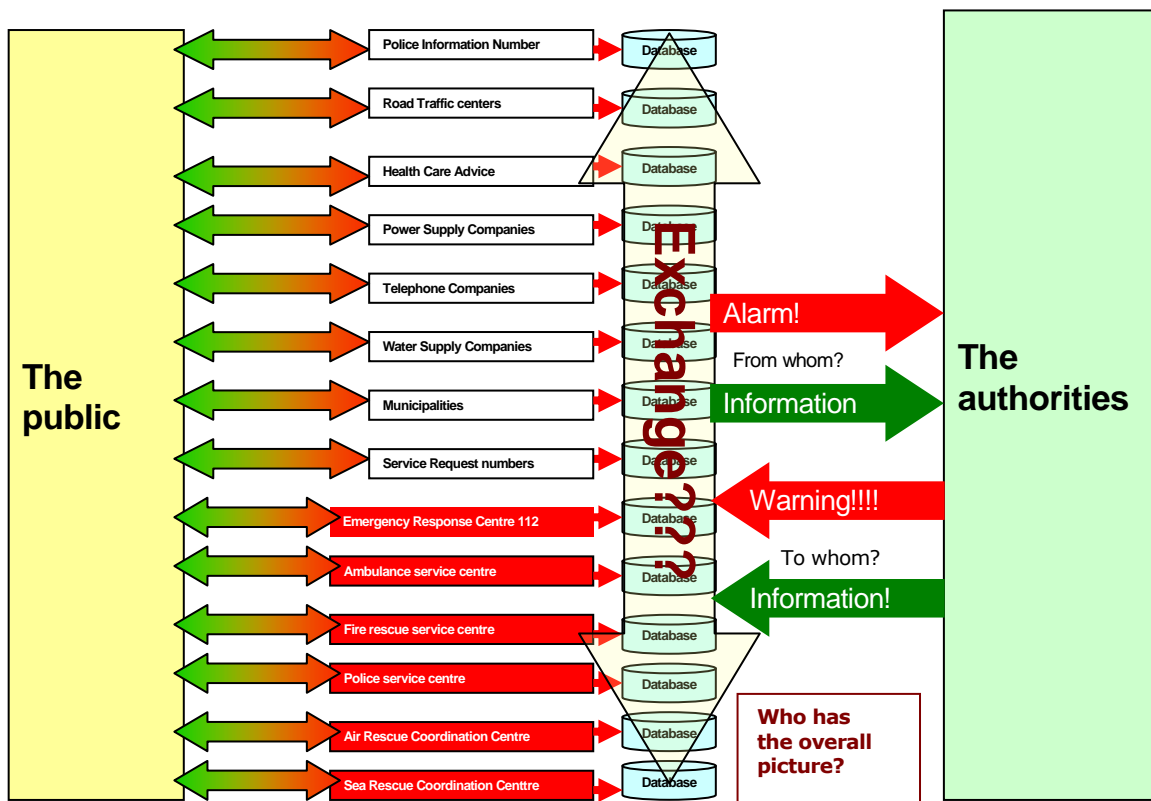
A project called "sms 112" is being conducted in Sweden and addressing how people with hearing impairment can get in contact with the 112 emergency call number service through SMS. The handling time of a sms-call is however very much longer than that of a 112 call on the telephone; about 21 minutes on an average compared with 5 – 6 minutes for normal 112 calls. In a crisis, this method would require very much more time of the operators than the use of other channels.

On the other hand, in a communication on SMS there can be a reference to another channel, for instance to the national crisis website to get information or to the communication number to have access to or provide information. A mobile telephone is more and more a pocket size computer, and it can therefore be more efficient to use other web channels than SMS. When it comes to warnings and other messages to the public, SMS can still be an excellent channel for disseminating information to many people within a certain geographic area.



## Information number(s)

In most EU countries, one or more information numbers are already in use and available for asking questions or making calls to get help of non emergency character and therefore not 112 emergency calls. These calls are often made to the police, health care services, poison information centre, fire and rescue services, municipalities and their services, road services, etc. and are received by the different authorities or other actors such as service providers. In Estonia there are different numbers 1345 for municipal service in Tallinn, 1524 for non urgent fire and rescue issues, 1313 for environmental matters and 612 30 00 for non urgent police matters. In Sweden the numbers are 114 14 for police in non urgent police matters, 1177 for health care information and general telephone numbers to the different infrastructure service providers. In different EU countries, there are completely different numbers for the all these types of calls with the same purposes.



*This figure illustrates that there are many actors handling communication to and from the public; the information nearly always remains with each actor in his database. It is not always clear which information the authorities should have and how or by whom it should be transferred to them. And the information and warnings are often not forwarded to all relevant actors in a structured way.*



Characteristic for these numbers is that they are related to a particular sector or service and there is no horizontal coordination over sector boundaries and of their information numbers as well as that the numbers can be reached by telephone and not for instance on social media. There are seldom, or never, any exchanges between the databases for these information numbers, which could provide valuable information seen in an overall perspective. Experiences from Sweden and other countries regarding for instance the Swine Influenza outbreak demonstrated that it was not clear for the public which authority is responsible for this matter and therefore should be contacted. The same applies for other matters.

As the information stays in the data bases of the actor and the exchange between the actors and databases is limited or non-existent, there is nobody who has an overall picture and can detect a threatening crisis which approaches gradually. The information numbers often have at present the character of a one-way monologue in which the public either is asking for information (for instance the health care information) or provides information (for instance to the traffic information centres). There is as a rule no elaborated structure or methodology for two-way communication, no strategy for how the information should be taken care of and stored and no solution for how the information should form a basis in the assessments and decision making of the authorities.

There are as a rule no national cross-sector telephone numbers for communication with the public, even if they are now being discussed and a process for the introduction of such numbers has started primarily in Estonia, Finland, Germany and Sweden. The benefit of having a well-known number which the public can call in crisis situations for obtaining information or communicating is evident. The public will if such a number is introduced not be uncertain as to which number to call (the number needs to be equally well known as 112) and will not have to know which authority it is necessary to contact for a specific matter. The authorities will in this way have a direct channel for communication to and from the public.

The model with a national information number for specific events has been implemented successfully on several occasions in Sweden when the need for providing information has been found necessary for a specific issue, for instance in connection with the Bird-flu and Swine-flu Influenzas. Special numbers were provided to which the public could call to ask questions about these illnesses. The competent authorities introduced a database with the most frequent questions which could be expected and answers to these. This FAQ-database could successively be supplemented with new answers as new questions were put by the public. The authorities could then get statistics indicating which issues were most important for the public and adapt themselves to this.

Also the national crisis web-portal for crisis information, which the Swedish Civil Contingencies Agency (MSB) has introduced in Sweden, is an example on how crisis information can be managed nationally. A problem is however that the public seldom start by looking at the websites of the authorities to get information but look instead at the sites they usually turn to, i.e. the websites of mass media.

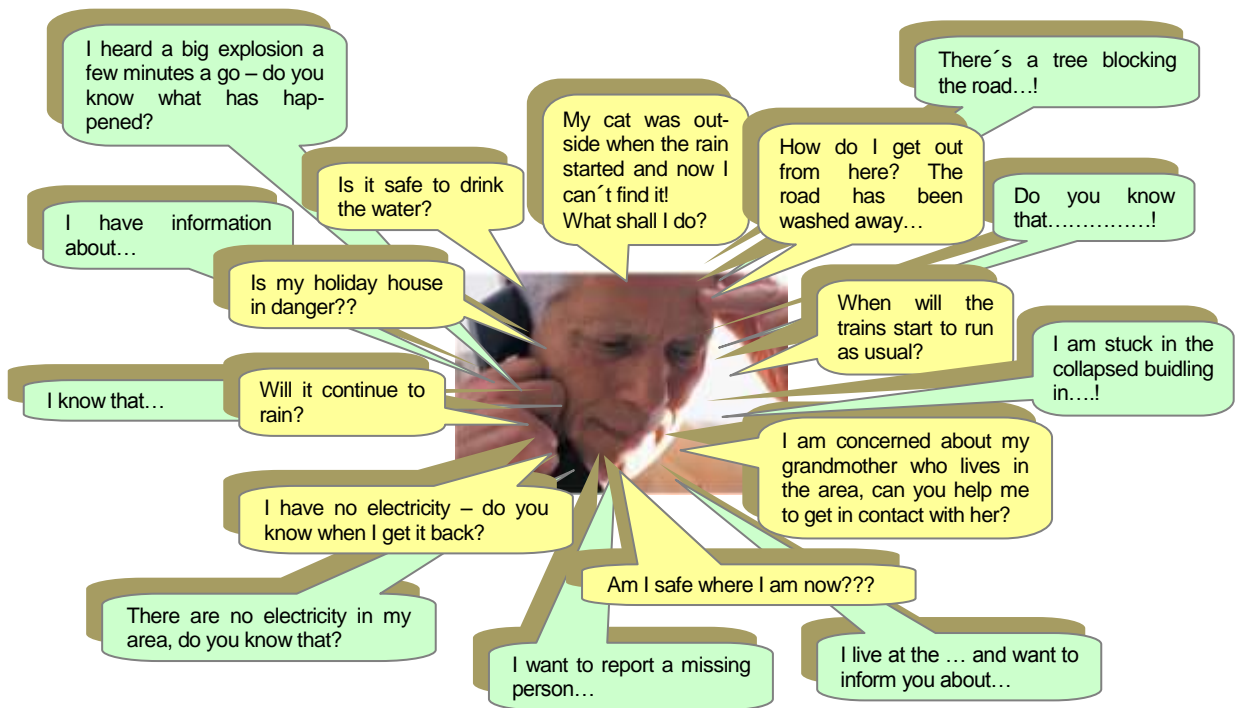
There does not seem to have been any considerations about how the information numbers should be systematically divided up, which makes it very difficult for the public to remember them. There is no common view within EU about which number should be used for what. This leads to citizens from one EU country visiting another not being able to use the information numbers he or she is used to from his or her own country as the numbers are different. This situation can be compared with system the common 112 EU emergency call number, which can be used in all EU countries.



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The term information number is in strictly speaking too limiting as it is a matter of communication in which information ideally is supplied in both directions and not only from authorities to the public. In the following the term information number will be avoided except when it is used for two-way communication in the description of the proposed model in this report.

A cornerstone in future crisis communication is two-way communication, i.e. to disseminate information and guidance to the public and to listen to, interview and receive valuable information from the public, which then can be compiled and used as a basis for decision making by authorities and other actors in the crisis management system.



The technical conditions for introducing a special information number have changed quickly in recent years and further changes will in the future probably be introduced even faster than they are now. At present, it is in a completely different way than earlier possible to provide a special information number in a combination of human, automatic, telecommunication and Internet based solutions. This has the consequence that it will be easier to manage for instance a mass call situation in a good way but the management can also be developed for events of a longer duration.

Also the methodology and organization for handling the technology and communication in a crisis must constantly be developed and restructured concurrently with the technological development. At present crisis management is conducted at many authorities and other actors and the goal must be relieve the pressure on these and also to establish a nave around which crisis communication can



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circulate, as opposed to having crisis communication conducted from many different actors with, if the worst comes to the worst, a split message to the public. This can easily cause confusion, anxiety and deteriorated credibility to the crisis management of the authorities.

There is a considerable need from both the side of the public and authorities for improved crisis communication in connection with particular events. At present, mass media provide information very quickly that something has happened but many questions remain unanswered and the information is not always verified and correct. The public has therefore also become faster in looking for information about an event. If no telephone number to call or an information forum is provided by the authorities, then relatives and friends are asked on the telephone, SMS or social media if they know any more. Rumours can in this situation easily get around and create a completely or partly wrong picture of the crisis.

More and more exchange of information is now taking place in social media through Internet fora, blogs, different on-line communities, etc. Development has exploded completely in the last few years with Face book as a prominent example. The extensive everyday use of social media can on the other hand lead to the communications in a crisis being facilitated and improved. An example of this was what happened after the earthquake and following tsunami in Japan on 10 March 2011 when the mobile tele-phon e net was knocked out for several days. Even so it was possible to communicate through social media such as Face book as the Internet traffic worked to a great extent (source morning Swedish TV programme Good morning Sweden on 13 March 2011). In this way, the individual person can get information from other people and share in-formation. It is obvious that the authorities could use social media in the same way.

The flow of communication in a crisis is complex with many involved who are seeking and wish to provide information and belong to the public, authorities and other actors involved in the management of the crisis (and the picture of the crisis). MASSCRISCOM therefore presents an ideal flow of information for the crisis management in which the nave is a so called Crisis Communications Centre (CCC) with the role of facilitating crisis communication between the public and the authorities.

A national number for communication with the public is an important part of the general crisis communication which also includes communication on a number of different channels and media. An aim with a common well known number for the authorities is to reduce the burden on the EU 112 emergency call number or other numbers which are often used for informing in general. Sometimes it is more a matter of finding out what has happened or to get this confirmed or ensure that it is known by the authorities, and not a matter of alarming the emergency services. This was the case when there was a very minor earthquake in Skåne in 2008 when the pressure on SOS Alarm was considerable.

Another reason why the 112 number is burdened by non-emergency calls can be that the public does not know that there are alternative numbers to certain services, alternatively the public is aware of this but does not know who is responsible for a certain type of incident. 112 has the benefit of being well known and easy to call.

A study conducted in 2010 supports the view partly that the public has limited know-ledge about alternative numbers to the emergency call number for use in non-emergency situations. Instead, the main reason seems to be improved conditions for mobile alarming and "possibly a tendency to find society a bit more subject to threats and risks". The study concludes that the increasing amount of calls is more an "effect of a deeper change in society". In the same study is presented the result of



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the introduction of the 311 number in the US, for communication between the public and authorities and the police for non-emergency situations, which reduced the burden on the 911 emergency call number by 20% in the first year and later the total reduction was 25 %. The total amount of calls which lead to assistance and help being given by the societal services increased in the first year even though the burden decreased on the 911 emergency call number.

The introduction of an alternative number to 911 and the increased amount of calls was perhaps due to the lack of a clear alternative to 911 previously and that the respect for the emergency call number probably had the consequence that no call at all was made in these cases. Most people were satisfied with the introduction of 311 and 75 % had the view that it had improved the service.

The concern in the beginning was that the public would not be able to distinguish between the emergency call number and 311, i.e. would not know in which situations the different numbers should be used. Soon however, it turned out that only 2 % of the calls on 311 could be considered to be of an urgent character and were connected to 911 and about 8 % of the calls on 911 were considered to be of non-emergency character and were transferred from 911 to 311.

## Reducing the burden on the EU 112 Emergency Call Number

To reduce the burden on the EU 112 emergency call number is important as its primary task is to provide urgent help to the public in emergency situations. Providing information in a crisis is however an important task in a crisis to reduce the anxiety of the public, give a picture of what has happened and information about what action to take in the crisis situation as well as receiving information to be able to make an assessment of the situation which supplements information from other sources.

The introduction of a communication number in Sweden is expected to reduce in general the amount of 112 calls with about 10–15 %, in particular in connection with extra ordinary events. Calculations made in connection with the severe storms Gudrun and Per indicate that about 80–90 % of all 112 calls in connection with these could have been managed with an information number. The same conclusion is relevant to the heavy rain in the South of Sweden on 5 July 2007, when 90 % of the calls were not real 112 calls which led to momentarily very heavy and exceptional amounts of emergency calls and in consequence to exceptionally long response times.

In the figure below, the amount of 112 calls in Sweden in 2010 which have been found not to be emergency calls can be seen. The yellow parts indicate calls which have been transferred to other non-emergency call numbers for instance the police non emergency number 11414. These calls would be reduced in numbers or disappear with a well know communication number.



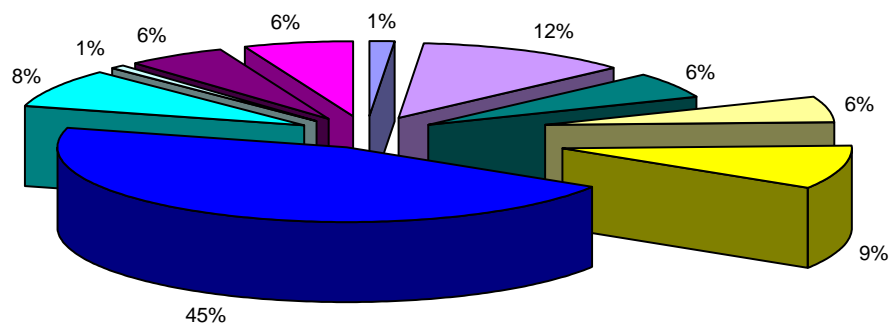
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Rejected calls to 112 in Sweden, 2010



- Other 112
- Call about known accident
- Not 112
- Referred to other help
- Referred to police 114 14 (not emergency)
- Silent 112-calls (no one there to speak to)
- Didn't know that they called 112
- Exercise/Test
- No action taken
- Joke calls, mischief calls

**Other 112** = when other reject labels do not apply

**Call about known accident** = someone else has already called about the accident

**Not 112** = there is no immediate need of help and the call is finished without any reference to other instance

**Referred to other help** = referred to call for other help, for example the health care information

**Exercise/Test** = for example when phone companies are testing the connection with 112

**No action taken** = No need for help, no action taken by the 112 operator

## Reducing the burden for the competent authorities

Also the burden of the authorities could be reduced by the introduction of a national communication number, both in the early phase of a crisis with a quick development before the authorities have been able to start their crisis management but also in the later phase of the crisis when the resources of the authorities are needed and have to be sufficient to manage the crisis. Experiences from exercises in Sweden demonstrate that it took about 2 – 4 hours for a municipality to make its information service to the public fully operational. The pressure on the telephone exchanges of the competent expert authorities and their experts was relieved and the information work was facilitated when a special information number was introduced during the Newinfluenza A (H1N1), which the public could contact to get answers to questions. The call centre which handled the information number calls then could answer the questions and was assisted with a database in which the experts of the authorities had prepared answers to general questions. The database was up-dated continually as new questions were asked by the public and new answers elaborated.



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A national communication number should be staffed around the clock all the year around. It should be possible to activate the number at short notice and to escalate the activity in an event with a quick development. Such a number should then also improve the possibilities for the public to come into contact with representatives of the authority (= the Crisis Communication Centre) even during week-ends, during night time, etc. when the authority is normally closed.

### The aim of a national information number

The aim of a particular information number service is inter alia to facilitate for the individual person to have access to information from the authority in an event by:

- having a simple number which is easy to remember and to contact in a suspected crisis event
- having a clear contact route to the authorities
- being always able to call this number irrespective of the type of crisis and thereby also which authority(-ies) that has (-ve) the responsibility for managing the crisis

In this way society will create a foundation for the individual to be able to take responsibility for his or her own and society's security

The foremost goal of introducing a permanent particular information number is that there should exist, already when a crisis occurs, a well known and established information telephone number with tested technology, working methodology and a trained and exercised administrative organization which can quickly be staffed sufficiently.

Basic requirements are for a particular information number are that it must:

- be permanent and the number shall function so that it reduces the burden on the emergency call number and shall be well known by the public
- always be staffed and accessible around the clock
- be able to provide current, confirmed and if possible coordinated, common information from the authorities or other actors who need to disseminate the message to the public
- be possible to use by all authorities with responsibility in crisis events at local, regional and national level
- be able to receive, compile and forward information to responsible actors
- be able to transfer calls to other actors as needed
- be marketed so that it becomes equally well known as the 112 emergency call number

It is important that the number is easy to memorize just as 112 is but it is not necessary to have a three figure number and is probably a benefit if it is not in order to avoid confusion with 112.



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## A common EU information number

If a communication number is to work in an optimal way in Europe where national borders are no longer a barrier, a common and unanimous view should be achieved regarding the number. Irrespective of which country in Europe a person is in when he or she wishes to call the information number, it must be completely clear for the person what number to dial for information, just as 112 will work in all EU countries if a person needs help in an urgent emergency situation. It is therefore necessary that the number has a mobile roaming so that also members of the public visiting another country can dial the number without needing to dial the country number firstly.

At present there is no particular and common number or series of numbers designated for communication in crisis events in the national number plans for telephony, at any rate in Sweden. It is important that such a number or series of numbers is established as soon as possible not in the least with respect to the planning going on in several countries for introducing such a number.

The European Conference of Postal and Telecommunications Administrations (CEPT) recommended in 1990 the harmonisation of certain telephone numbers in a document, Long Term Standardisation of National Numbering Plans. This document led to the harmonization of the 112 through the Council Decision of 29 July 1991 on the introduction of a single European emergency call number (91/396/EEC). The same report also recommended the harmonization of 115 as the number for the international operator and 118 as the code for national directory enquiries. Some countries follow this or intend to follow it. Germany however has the intention to use 115 as their information number.

A possible alternative could be to use the six-digit number range starting with 116 for services of social value in the EU (2007/116/EC, 2007/698/EC and 2009/884/EC). Harmonised service of social value is defined in Article 2 (2007/116/EC) as a service meeting a common description to be accessed by individuals via a free phone number, which is potentially of value to visitors from other countries and which answers a specific social need, in particular which contributes to the well-being or safety of citizens, or particular groups of citizens, or helps citizens in difficulty. To use several numbers in the range starting with 116 would be appropriate and in accordance with the definition. Some specific numbers within the '116' numbering range are already reserved:

116 000          Hotline for missing children

The service (a) takes calls reporting missing children and passes them on to the Police; (b) offers guidance to and supports the persons responsible for the missing child; (c) supports the investigation. The service is continuously available (i.e. 24 hours a day, 7 days a week, nation-wide).

116 111          Child helplines

The service helps children in need of care and protection and links them to different services; it provides children with an opportunity to express their concerns, talk about issues directly affecting them and contact someone in an emergency situation. Where the service is not continuously available (i.e. 24 hours a day, 7 days a week, nation-wide), the service provider must ensure that information about availability is made publicly available in an easily accessible form, and that, during periods of unavailability, callers to the service are advised when the service will next become available.



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### 116 123 Emotional support help lines

The service enables the caller to benefit from a genuine human relationship based on non-judgmental listening. It offers emotional support to callers suffering from loneliness, in a state of psychological crisis, or contemplating suicide. Where the service is not continuously available (i.e. 24 hours a day, 7 days a week, nation-wide), the service provider must ensure that information about availability is made publicly available in an easily accessible form, and that, during periods of unavailability, callers to the service are advised when the service will next become available.

Other specific numbers used are the 116 006 Helpline for victims of crime and the 116 117 Non-emergency medical on-call service.

This is as mentioned a six-digit number range starting with 116, but the number 116 112 must not be used to avoid confusion with the single European emergency call number 112. An alternative number range could be 119 which does not seem to be reserved. There should also be a number in the chosen range for sending SMS messages. The British Foreign Office has a service, which has been introduced, enables British citizens to report their telephone number when they go abroad and they will then get relevant information from authorities on this number.

## Accessibility in foreign countries

It is important to be able to call the national communication number in the home country also from abroad. A crisis may affect a country's citizens on visit or living abroad and there can be a need for this person to contact relatives and authorities at home and vice versa. That this need is a reality has been experienced in the natural disasters, terrorist attacks and armed conflicts that have affected European citizens outside Europe. The acute emergency response is however always carried out in the country where the incident has occurred.

## A national umbrella number

In a study conducted in Sweden after Hurricane Gustav which hit Louisiana in 2008 almost three years after Hurricane Katrina, there is a suggestion to introduce a common portal number for different information activities. It would work in the same manner as the 112 number does in for example Finland and Sweden, i.e. by calling the number and being able to reach for instance the health care information service or the poison information centre. In this way, it would be easier to market the number and make the public aware of the number as the number to always call when one has a need for information, in everyday situations and in crisis, just as 112 is well known for being the number to always call when help is urgently needed in an emergency situation.

The idea of a common portal or national umbrella number is interesting and would most likely in time lead to an equal level of awareness of the number as the emergency call number 112, which would be beneficial in threatening crisis situations when the public does not have time or possibilities for seeking or having knowledge about which number to call. The disadvantage can be that there are many actors who want to participate in the service and it can be difficult to decide where to set the limit. Should for instance critical infrastructure suppliers such as energy supply enterprises and telecom operators be allowed in, should help-lines for women and support to maltreated child-



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ren as well as psychological and social support be included and should information from transport systems such as road, rail, air and sea transport services be provided?

It could furthermore be difficult to get a European or international common view on how such an umbrella number should be used and who should be included as service providers. If it is to work fully, there must be a structure which is agreed on and similar in all EU countries.

## A national number – steered by needs

An alternative to having a single national information number, which could be a part of an umbrella number, would be to add some numbers, linked to different needs such as language, sign language, etc., after the three digit number 119. This would mean that a person who wishes to communicate in a different language can call a number leading to the desired language from the start, thereby avoiding to pass a telephone exchange or a toggle selection. The benefit is also that calls from people with particular needs can be directed to the correct language or sign language.

### Information in other languages

119 X0	Information in sign language	
119 X1	Information in German	
119 X2	Information in Spanish	
119 X3	Information in Polish	
119 X4	Information in Finnish	
119 X5	Information in Arabic	
119 X6	Information in English	
119 X7	Information in Danish	
119 X8	Information in French	
119 X9	Information in Icelandic	

**EXAMPLES**

Assumes an agreement with interpreter services 24/7.

Could the CCC:s in the EU cooperate and translate the information to inform its own citizens i other countries?

This tentative solution would require marketing of several numbers, but this could be facilitated by the number being focused directly to the relevant target group. A tourist visiting another EU country than his or her own can be informed before leaving by for instance the travelling agency or a tourist office. The disadvantage is that it can be difficult to have a 24 hour preparedness for communication in different languages and requires legal agreements to be made with interpretation and translation services. If a digit number range is applied (119XYZ) in the suggested solution, then an example of its practical implementation could look like this:

- 119 XY1 communication in the relevant language in the country or affected part of the country
- 119 XY2 communication in the relevant language in the country (second language)
- 119 XY3 communication in the relevant language in the country (third language)



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119 XY4 communication in the relevant language in the country (fourth language)

119 XY5 communication in a foreign language (first language)

119 XY6 communication in a foreign language (second language)

Etc.

119 X21 communication with people with hearing impairment in the relevant language in the country or affected part of the country (text telephone, sign interpretation, etc.)

119 X22 communication with people with hearing impairment in the relevant language in the country or affected part of the country (text telephone, sign interpretation, etc.) (second language)

119 X23 communication with people with hearing impairment in the relevant language in the country or affected part of the country (text telephone, sign interpretation, etc.) (third language)

Etc.

When the number is not staffed, depending on what availability there is to other languages, an answering machine can provide a message that the number is not at present in use but will be made operational only in the event of a major crisis. The telecom technology in use now gives the opportunity to define what foreign subscriptions there are in a country and send a SMS to these when the information number in their language is put into use

## Need for language and sign interpretation

Interpretation to several languages and sign language as well as if possible picture communication must be linked to a national communication number. It is naturally not possible to have interpreters on site in the CCC and the solution to this problem is to make legal agreements with interpretation and translation services so that these will be available at short notice to provide the CCC with necessary interpretation and translation help in order to translate messages and information from the authorities and provide staff to answer to calls in foreign languages. How many languages that need to be covered can vary from one country to another depending on the cultural and linguistic conditions in the country. The issue of which languages that need to be provided is something to be considered at EU level.

Actually having the interpreter physically on site in the CCC is not necessary with modern technology, the interpreter can instead be connected to the CCC through pre-prepared virtual nets which give access to the CCC's databases with information and opportunities to log in as an administrator on the in-coming channels for the language in question. SOS Alarm now has agreements with interpretation services which can provide instantaneous access to certified interpreters on telephone in 200 languages 24 hours a day. When there is a need for interpretation, the interpretation service centre, which immediately searches for an interpreter in the relevant language, is contacted. It normally only takes about 5–10 minutes to connect an interpreter to the call. Translators are also needed for the translation of warning messages and other official information to the languages which the authorities have decided in advance to have available.



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## Answering machine

Many people call the 112 emergency call number in situations where they have understood that something has happened which does not affect themselves directly but they still wish to have confirmation that something has really happened and that this is known by the authorities, for example in connection with the minor earthquake on 16 December 2008 in Sweden. This earthquake did not cause any human injury but some very minor damage to property, but there were so many people calling 112 that they resulted in a mass call situation which lead to long response times to calls on the emergency call number 112.

One way of reducing the amount of “unnecessary” calls (in the meaning that the caller does not have any information to give and cannot receive more information than that something has happened) which the CCC operator has to handle can therefore be to provide an answer on an answering machine which takes care of the call. In the beginning of a crisis with a quick development, there is usually not all that much information to give, but the information that the CCC is aware of the event is probably enough to calm down the caller. A message like this from the answering machine should be supplemented with an invitation to speak with a CCC operator if the caller has mere precise information about what has happened. In this way the amount of report from people who are just curious can be limited in favour of the calls in which the caller can provide information about what has happened, the size of the event, etc.

An answering machine does not replace the contact with the CCC operator but can be a supplement for the caller who is trying to get confirmation that he or she is not the only one who has experienced something which can be a sign of something which can be a large event. The answering machine will only contain a short message about what has happened alternatively that something has happened (about what is not known). And example of this: “we are at present receiving many calls from X-town about a very large explosion and that the ground was shaking in connection with this. There is no more information at this stage but if you have more information about the event, we ask you to stay on the line and provide it.” To provide quickly a message in the answering machine must be a priority task for the CCC.

## Information concerning the queue number in the answering machine

It might be felt that a message concerning the queue on the crisis communication number should be is unnecessary as the public expect to be responded to quickly when the CCC is called. There will however be crises which escalate so quickly that the CCC will not have time to escalate its own services. According to the researchers, queue in-formation which indicates which queue number and expected time in the queue has the effect that the caller still waits on the phone instead of hanging up when he or she gets to know how long the waiting time can be.

## Toggle selection

There are possibilities for using toggle selection but the amount of levels in the selection should not be too many. The US information numbers 211 and 311 use both answering machine information and toggle selection. When 311 was to be introduced in New York, Mayor Bloomberg was of the opinion that the maximum amount of choices that should ever be met by anyone in an answering machine service was three, but two was optimal – if they cannot be avoided all together. And this view is highly relevant.



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One of the alternatives should always be to have the opportunity of speaking to a telephone operator. A call should also in the same manner be connected to a telephone operator after a certain time, for instance 10–15 seconds, if no toggle selection has been made before this. Toggle selection can provide opportunities for handling more than one crisis at the same time with better

### Toggle selection, occurrences

“Welcome to the crisis communication centre. You will soon be able to choose between different options by toggle selection. If you have an emergency and need immediate assistance by police, ambulance or fire rescue service, please hang up and dial 112. If you have information to give or want to speak to a call-taker, please press 0.”

- 1** Press 1 to get information about flooding in the areas around X County
- 2** Press 2 to get information about the major power failure around Y City
- 7** Press 7 to get information about the Z flu
- 8** Press 8 to get information about what to do in case of missing a relative
- 9** Press 9 to get information about where to turn if you have questions about health-care, police issues, common advice about fire safety etc.

- 0** Press 0 if you want to speak to a call-taker
- #** Press # if you want to repeat a message

precision. An answering machine message can supplement toggle selection and give guidance regarding which event the caller wishes to speak with the CCC about, for instance the Swine Influenza or a current chemical accident. For the responding operator, the toggle selection can right from the start have a connection with the file handling system of the CCC which leads the call to the correct level for this.

### Example on toggle selection, languages

Flags below representing languages

“Welcome to the crisis communication centre. You will soon be able to choose between different options by toggle selection. If you have an emergency and need immediate assistance by police, ambulance or fire rescue service, please hang up and dial 112. If you have information to give or want to speak to a call-taker, please press 0.”

- 1**
- 2**
- 3**
- 4**
- 5**
- 6**
- 7**
- 8**
- 9**
- 0**

As was demonstrated in the example on using the umbrella number, toggle selection can be used as a way of reaching different information numbers. Each actor can be given a different toggle selection with a limitation to nine operators with the exception of the CCC. Toggle selection can also be used as an alternative to having one number for each of the languages which are used for the communication.



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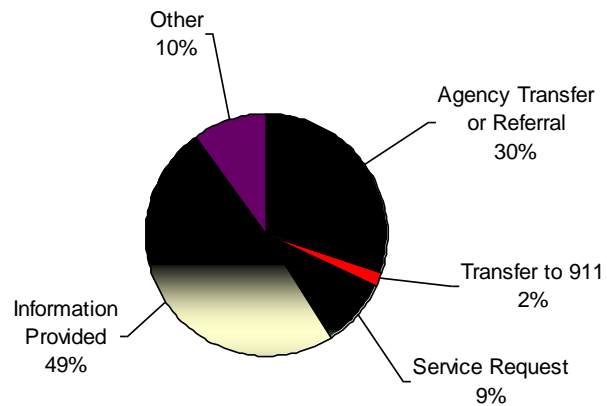
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### Gathering information – disseminating information to a selected group

The CCC can in certain situations also be used for gathering information, i.e. for addressing a particular target group to be able to collect and compile information. One example is from 2008, when the Bluetongue disease was discovered on a farm in Sweden. The Swedish Board of Agriculture found that it was necessary to conduct an inventory of the stock of cattle in Sweden. SOS Alarm was given the task to call all farms for this purpose and at the same time inform the farmers about the Bluetongue disease.

311 Inquiries handled in New York City, march 2009



### Connecting calls to the EU 112 emergency call number and vice versa

It must be possible for the CCC to connect directly calls to the 112 emergency call number service from persons, who the CCC operator finds are in such a situation that immediate urgent help is needed. The reason for this is to gain the time which can be important in the acute situation and to avoid the risk of losing contact with the person seeking urgent help.

There was a concern in the US in connection with the introduction of the information number 311 that the public might have difficulties in being able to understand the difference between the situations, i.e. when the emergency call number 911 should be used and when it was more appropriate to use 311. It became however quite soon clear that the public had a good perception of which number to use in different situations.

According to the experiences from the US of the 311 number, 2 % of the calls to 311 were considered to be emergency calls and were therefore connected to the emergency call number 911 which can be seen in the figure below demonstrating how the 311 calls were handled in 2009 in New York. It is however not certain that once the 311 call has been re-connected it is considered to be an emergency call.

The question is whether the 112 emergency call number service should have the possibility of connecting what has been received incorrectly as an emergency call in the opposite direction to the CCC or not. In this situation, there is not a similar need for gaining time or even running the risk of dropping the call. There is always the risk that calls, which are not urgent, delay the urgent emergency response and also necessary help to a person who really needs it. But if a massive information and marketing campaign regarding the crisis communication number is conducted, then this should reduce that risk considerably. It is important that if there is a decision to transfer a 112 call to the CCC then the whole call is transferred to avoid that it unnecessarily blocks a 112 telephone line.



## **Financing a call through a fee or not**

If the crisis communication number is to be used by the public in general then there must be no fee for a call, as is the case with 112 calls. Nobody should be prevented from making a call because the telephone bill has not been paid or because there is no money left on the SIM-card. If there is a fee for calls on the crisis communication number, there is however a risk that people lacking money call 112 which is free to be connected to the crisis communication number.

## **National information service through other communication channels**

The extensive use of Internet has resulted in more and more people seeking information on the Internet. There is an information seeking culture of a new type which no longer is limited to younger people but now includes large parts of the population in general. This provides opportunities for disseminating information but also to register questions which are answered. A fundamental approach is that the CCC should be able to communicate on all different existing channels. It is also important that the CCC successively adapts itself to the new channels and media.

Linked to the CCC is the possibility of communicating also through other channels, social media (Face book, Twitter, blogs, etc.), through SMS and e-mail. This can have the disadvantage that the present fast human contacts are lost but on the other hand it is a benefit that the communication is of an outreach type and it is possible to reach larger groups of people than what is possible through conversations with one person. Naturally, it is important that the information is concordant irrespective of which channel that is used for the communication.

## **Calling back or feed back after a call**

If there is a feed back to those who have communicated with the CCC, then this will probably give a positive impression of the CCC and also the authorities, which gives the individual a feeling of being visible, to be important. It can lead to the caller not hesitating to contact the CCC again and that the authorities are seen in a positive light, i.e. that they care for the individual person.

In Estonia, the policy is to always take some feedback measure and give information about how the event developed to the person who called the information number 1345 in Tallinn. Sometimes a feedback can be given directly in the first contact, in other cases it may take a longer time, even up to a few weeks, before the feedback can be made. The person who provided the information is reported to have become positively surprised by getting something in return. This policy of always providing a response of some sort could be a good way of increasing the credibility of a CCC.



## **Continuous flow/exchange of communication between the CCC and competent authorities**

There will be continuous communication between the public, the CCC and the authorities during and directly after a crisis, perhaps even before if there was an early warning (and if this was understood). The crisis is on other words not a non-recurrent event, i.e. that something happens, which the CCC gets knowledge about, which is transferred to the authorities and which then comes back in the form of information to the public. It has instead the character of a process going on during the whole crisis, which requires a close collaboration between the CCC and the involved authorities.

The expectations of the public on society's ability to provide information quickly are considerable. The development of the media in particular within the area of telecommunications with mobile telephones, Internet and thereby social media, seems in general to have raised the demands on the preparedness of the public institutions to be able to take care of crises.

There will be parallel processes at the CCC and in the authorities respectively and it is of significant importance that these processes which take place more or less at the same time, are conducted at the same pace. If they are out of step, for instance the CCC does not deliver the necessary material for decision making to the authorities or on the other hand that the authorities cannot deliver the material for information to the public to the CCC, then this will have consequences for how the crisis communication works and as a result of this how the crisis is managed or how the public sees the crisis.

## **Common Situation Awareness System**

Situation awareness is a perception of how what has happened will impact on the decision making of a crisis management actor. The foundation of the situation awareness is the situation picture. Both the situation picture and the situation awareness are connected to the decision making and are necessary for determining if action is required in some way and if this is the case what action.

A fundamental condition for making collaboration between authorities work is that all the involved authorities have access to the same information and to all the information in an event. Only if the authorities have the same data, the same situation picture, as a basis will they be able to create in an efficient way the same situation awareness from their perspective within their own area of responsibility. A problem at present is that there are different systems for creating a situation picture and these are not shared by all authorities, in any case not by all of the authorities. To get an overview of which systems that exist and are used is difficult as many of them are used internally within an authority and are not presented externally.

## **Ushahidi**

A system which deserves to be mentioned is Ushahidi which however is not designed for authorities but for the public and in which the public contributes with the contents. Ushahidi, which means a testimony in Swahili, was invented in connection with the elections in 2007 in Kenya, which were violent and bloody and there was electoral rigging, as a way for people to report cheating and violence by sending text and photos with the mobile phone to a website. It is thus a web based platform which is built on a mash up of SMS, MMS and Google maps and conducted as an open-



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source-project. When large crises occur, a map based website is therefore established to which the public has access and can report the situation through social media. So far, websites have been established during for instance the earthquakes in Haiti in January 2010 and in Christchurch, New Zealand, in February 2011.

The Ushahidi Team see it as an efficient tool for "crowd-sourcing", a form of mass consultation and problem resolving which with the assistance of the public over Internet solve the task or develop products. The task is put on Internet and anyone who so wishes is allowed to participate. There is no need for a personal contact but interested persons are invited to submit proposals. The organizer chooses between these but it is also possible to let the interested persons vote for a certain solution. The view is that the general public can with its wide knowledge and fantasy and new perspectives on the problem may find new unexpected solutions,

not the experts. The expression "crowd-sourcing" was first used by the American journalist Jeff Howe in 2006 in an article.



Examples of the Ushahidis website on which the public suffering from the earthquake could report needs for help and situation pictures from the damaged areas.



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## InciWeb

Incident Information System (InciWeb) is an authority managed system which is open to the public, which is unusual. The system is used for providing information about forest fires in the US. Nine authorities are involved in the website including the US Fire Administration, the US Forest Service, the National Oceanic and Atmospheric Administration and the National Park Services and it is presented as follows on the website:

InciWeb is an interagency all-risk incident information management system. The system was developed with two primary missions:

- Provide the public a single source of incident related information
- Provide a standardized reporting tool for the Public Affairs community

A number of supporting systems automate the delivery of incident information to remote sources. This ensures that the information regarding active incidents is consistent, and the delivery is timely.

Active and non active events are listed and it is possible to find more in-depth information about each event.

The screenshot displays the InciWeb Incident Information System interface. At the top, there are search filters for 'Select an Incident' and 'Select a State'. Below this is a 'Current Incidents' section with a table listing various incidents. The table has columns for Incident, Type, Effort, Area, Status, Acres, and Updated. The incidents listed include 'R1 Complex', 'Litt Chert', 'Grain Gulch', 'Fisher Ranch', 'Pomeroy/Olsen Co Fire', 'Tree Farm Pipe Complex', 'Whitlat', 'Rock House', 'Tustin', and 'I-6'. To the right of the table, there are filters for 'Max Age', 'Status', and 'Type'. Below the filters, there is a 'RECENT ARTICLES' section with several news items, and a 'FOLLOW US ON' section with social media links for Twitter, Facebook, Digg, LinkedIn, and StumbleUpon.

Incident	Type	Effort	Area	Status	Acres	Updated
R1 Complex	Wildfire	Texas Forest Service	Texas, USA	Active	10,734	11 hrs. ago
Litt Chert	Wildfire	20000 National Forest	New Mexico, USA	Active	4,000	12 hrs. ago
Grain Gulch	Wildfire	Forest Service	Texas, USA	Active	4,300	16 hrs. ago
Fisher Ranch	Wildfire	Texas Forest Service	Texas, USA	Active	3,300	16 hrs. ago
Pomeroy/Olsen Co Fire	Wildfire	Texas Forest Service	Texas, USA	Active	20	16 hrs. ago
Tree Farm Pipe Complex	Wildfire	Texas Forest Service	Texas, USA	Active	65,500	19 hrs. ago
Whitlat	Wildfire	Texas Forest Service	Texas, USA	Active	10,300	20 hrs. ago
Rock House	Wildfire	Texas Forest Service	Texas, USA	Active	20,000	20 hrs. ago
Tustin	Wildfire	Texas Forest Service	Texas, USA	Active	50	21 hrs. ago
I-6	Wildfire	Texas Forest Service	Texas, USA	Active	15	22 hrs. ago

*It is possible to choose an event on a map linked to the file and get a picture of the location and the size of the fire. It is also possible to see photos from the event.*



### Mass Crisis Communication with the Public MASSCRISCOM

The screenshot shows the InciWeb interface for a fire incident. The main heading is "ANNOUNCEMENT" for "Young County Annex Fire Camp Closure". The text states: "The Young County Annex has been parking in a Fire Camp for the PK Complex Fire. The entire community of Ashburn has been in available support to the firefighters. All of the firefighters..."

Below the announcement is a map titled "Approximate Location" showing the incident site in a red-shaded area. The map includes a search bar and a "Zoom" control.

On the right side, there are several information panels:
 

- CONTACT INFORMATION:** Lists "Talent Forest Service" with address "301 Tallow, 2010 SW College Station, TN 37043".
- INCIDENT CONTACTS:** Lists "Ashburn Town Public Information Officer" with phone "423-272-4000".
- INCIDENT DETAILS:** Provides "Young County Annex Fire Camp Closure Announcement" with a "21 hrs ago" timestamp.
- RELATED INCIDENTS:** Lists other incidents like "Announcement From Public Safety Emergency Services" and "Starting Announcement From Tal...".
- COLLECTED INFORMATION:** Lists "Twitter Feed", "Article RSS Feed", and "Google Earth Network Feed".
- SHARE THIS:** Includes icons for Twitter, Facebook, Digg, and StumbleUpon.

### WIS

WIS is a national web based information system which has been developed by the Swedish Civil Contingencies Agency (MSB) to facilitate dissemination of information to and between the actors in the Swedish crisis management system before, during and after a crisis.

The screenshot shows the WIS homepage with a blue header and navigation menu. The main content area is titled "Välkommen till WIS" (Welcome to WIS) and contains a brief description of the system's purpose: "WIS är ett webbaserat informationsystem för att underlätta informationsutbytet mellan aktörerna i krisberedningssystemet. Systemet är utvecklat för att i huvudsak användas under en kris, men det ska även kunna användas som efterhandsarbete i det förbyggande arbetet och som stöd vid övningar och utbildning."

On the right side, there is a map of Sweden with several blue location markers. Below the map is a "Senast uppdaterade" (Last updated) section listing various updates with timestamps and brief descriptions.



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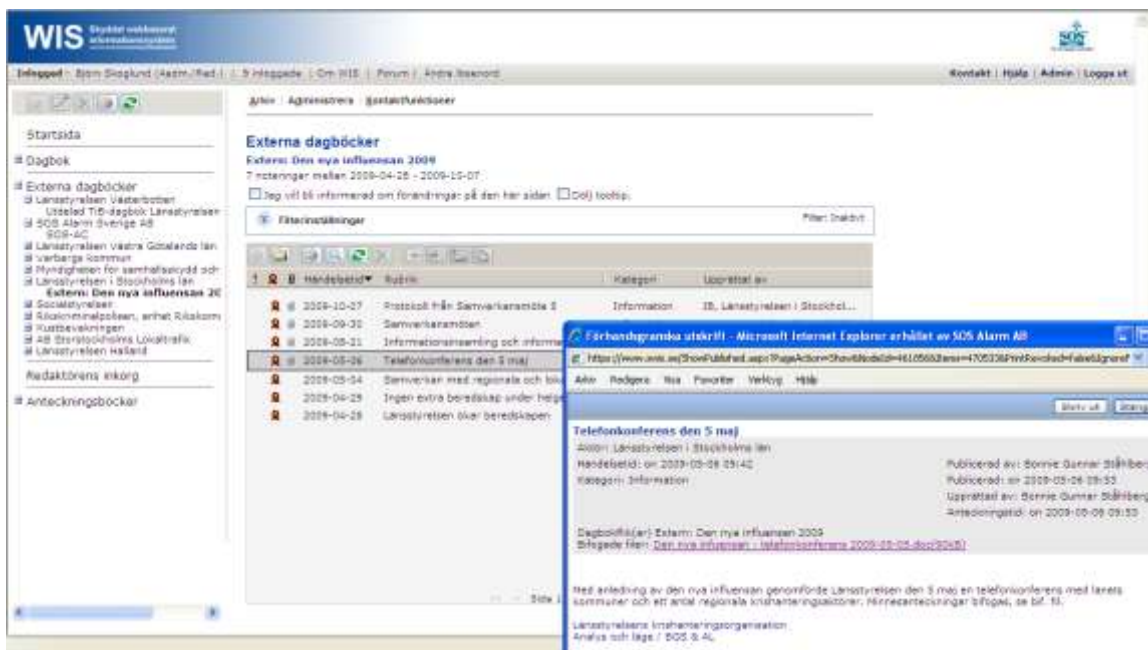
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WIS can be reached on Internet but is protected. It is therefore necessary to get permission from MSB to enter and a code is required. MSB is responsible for managing the web site, its development, maintenance and financing, which means that there is no cost for the crisis management actors to participate.

The actors share information with each other and there is a log-book system in which each actor has its own log-book. The log-book consists of different files. The actor decides if other actors are to have reading access to the different log-book files and in this way the actors will be able to follow the development of the crisis in each others' files.



This example is from the authorities' activities during the New Swine Influenza in 2009.

The WIS system was developed to allow the authorities, municipalities, county councils and also private actors who have responsibilities to have the opportunity of creating their overall picture of the situation during a crisis by participating actively in the sharing of decision making information. The decisions made by the different authorities can for example be filed during the crisis.

Also actors in adjacent trans-boundary areas in Denmark, Finland including Åland and Norway can apply for participation in order to facilitate trans-boundary collaboration between the countries.

## Joint Situation Awareness Web

The Joint Situation Awareness Web is a web based information site which contains information about current events and accidents in society, for instance failures in the infrastructure, the weather forecast and weather warnings.



### Mass Crisis Communication with the Public MASSCRISCOM

The idea to develop this common web application came when the Traffic Management Centre, the Fire and Rescue Services, the Police and SOS Alarm in Stockholm in 2005 realized that there was a need for a better system for exchanging information than by using e-mail, telephone calls or tele-facs. It was a both time consuming and resource requiring task to extract what was needed from the enormous inflow of information and sometimes information was still lacking completely.

### The Traffic Management Centre in Stockholm

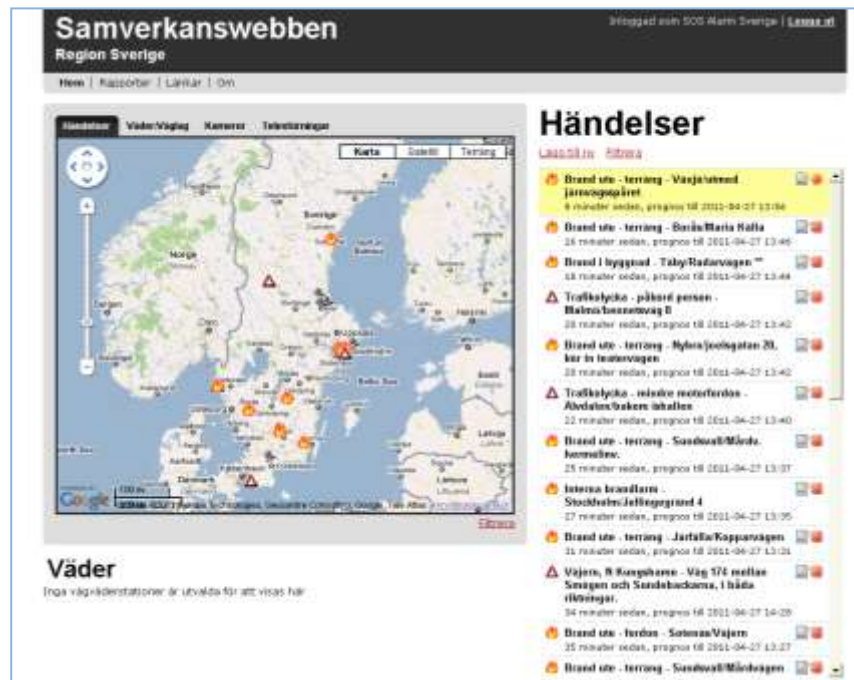


At the start, the intention was that the Joint Situation Awareness Web would inform about events which affected the road traffic but since then the website has been extended to contain also information about other types of events and failures in other infrastructures.

SOS Alarm is now responsible for the management and maintenance of the Joint Situation Awareness Web and participating actors contribute to the costs and have to be prepared to share information. This web site is protected and requires a code to enter and is thus not open to the public.

Information is transferred automatically to the Joint Situation Awareness Web from the systems of the different actors, i.e. 112 calls, traffic incidents, police files, etc. and is compiled in a list and positioned on a map. It is also possible to create new files manually. The participating actors can go in and make comments in a file.

Information can now be found in the Joint Situation Awareness Web about:



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- Fire and rescue incidents (fires, traffic accidents, clean up of hazardous spills, explosions, dangerous goods accidents, etc.)
- Major disturbances of the traffic (closed roads, road ferrys not working, closed bridges, etc.)
- Police actions (crime, demonstrations, closed areas during official visits, etc.)
- Planed events, for instance planned closures of roads or coming events
- Disturbances in the supply of electricity
- Disturbances in the telecommunications (both fixed and mobile telephony, IP-telephony and data communication)
- Weather warnings (and the weather forecast in general)
- Important messages to the public and other large events which are deemed to have an influence on society to a certain degree

No incidents related to ambulance services are shown due to integrity reasons

It is possible to filtrate different types of events, for instance weather warnings can easily be excluded if this is desired. An overview of the weather situation, which is provided by SMHI, can be found, camera images "live" though still from the cameras which are operating along the roads and also such information from the last 24 hours.

The Joint Situation Awareness Web is used daily in Sweden by the police, the fire and rescue services, SOS Alarm, the Traffic Management Centres, the County Administrative Boards, the County Councils, etc. to form a view of the situation when needed.

## **Required qualities of a Joint Situation Awareness Web**

With the experience of this present Joint Situation Awareness Web some conclusions can be drawn on which principles that should be taken into account to make a Joint Situation Awareness Web really useful:

- It must be used for this purpose in everyday emergency handling, there is no time to learn how the system works when the crisis strikes
- No system for this purpose is better than its content
- Every participant who wants to get information must therefore also be ready to deliver information to the system
- The system must be fed automatically with data, not manually, to economize resources, otherwise there is a risk that it not will be used properly because of lack of time
- The incoming data should be delivered in real-time
- The data must have a high degree of reliability
- The system must be easily accessible, yet secure, otherwise there is a risk that not all actors want to share important data
- The data must be easy to read and get an overview of the situation
- It is essential that the information or data is GIS map-based



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- It is desirable that it is possible to filter the information or data to be able to choose the segments that are of interest to a specific actor

Obviously, it is important for authorities and other actors in the crisis management system on local, regional and central level to have a Joint Situation Awareness Web available. It is worth repeating that, however well the Joint Situation Awareness Web is developed, it will not work to full satisfaction unless all actors realize the importance of contributing with information to the system. The flow of information and its management in the system must be in place and structured before a crisis occurs.

## Geographic Information System or Geospatial Information System (GIS)

GIS is a system that captures, stores, analyzes, manages and presents data with reference to geographic location data, i.e. the merging of cartography, statistical analysis and database technology. As the system for a Joint Situation Awareness Web is map-based, it will offer opportunities for supplement the data fed into the system with basic data which is already there or is possible to add to the situation awareness system. This will give access to construction drawings of certain buildings, the capacity of networks of different types or currently geo-code, the received information on for instance water levels.

The geographic information which then will be available with a developed map-based system will consist of:

- Basic geographic information, i.e. ordinary maps of cities, regions, roads, etc.
- External geographic information which can be added temporarily, i.e. weather forecasts
- Dynamic geographic information which in real-time is fetched from sensors of different types, i.e. concerning water levels.

## Individualized weather warnings

The national forecasting and weather warning service has as its most important task to contribute to improve the safety and security of society. Well elaborated weather forecasts and other data in this respect are an important basis for decision-making within the crisis management system and can lead to making it possible to take the response measures in the right place at the right time. The Swedish Meteorological and Hydrological Institute produces weather warnings when an approaching weather and/or water situation is assessed to reach certain established criteria. These criteria have been defined and indicate the estimated risk and effects in society. SMHI has, together with a number of actors in the crisis management system, established the following three levels for each type of warning, of which class three is the most serious level of warning:

**Warning class 3:** Very extreme weather which can be expected to lead to a high level of risk for the public and significant disruptions in critical infra-structures. The public is requested to study urgently new information which may be issued on Internet, radio or TV.



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**Warning class 2:** The development of the weather is expected to lead to danger for the public, considerable damage of property and significant disruptions in critical infra-structure. The public is requested to study urgently new information which may be issued on Internet, radio or TV.

**Warning class 1:** The development of the weather is expected to lead to certain risks for the public and some disruptions in critical infra-structure.

The warnings were previously only issued on the website and by e-mail and facsimile to a few authorities and operational actors in the crisis management system. A new system for production and dissemination of warnings was introduced in 2010 by SMHI. In the new system, production and dissemination have been separated, which will allow for improved access to the information through more distribution channels. The new system is fully adapted to an international standard, the Common Alerting Protocol CAP).

This standard will be possible to use for all types of public warnings as it is designed as an all-hazard format and will be implemented in the whole world, not only for weather and water related events but also for example for earthquakes, threats to public health and a number of different types of crisis related information. Within for instance the World Meteorological Organization (WMO), there are discussions concerning implementation of CAP both for the European warning portal Meteoalarm ([www.meteoalarm.eu](http://www.meteoalarm.eu)) established within the Network of European Meteorological Services (EUMETNET) and in the different countries' National Hydro-Meteorological Services (NHMS).

By using the CAP standard for all weather and water related warnings, the information can on receipt by the different parties and systems be managed in exactly the same way as all other messages within the safety and security crisis management. This approach will also simplify the management for a CCC, websites for crisis management, European warning portals such as Meteoalarm, mobile apps, etc.

## **Interfaces for individualized weather/water warnings, established within MASSCRISCOM**

In order to contribute and provide society with further benefits in respect to the ability to issue individualized weather/water warnings, MASSCRISCOM has developed methods and interfaces (below called warning portals) to increase the level of individualisation in respect to the distribution of warnings. The warnings as such, the criteria for executing warnings, the elaboration of the warnings and the costs for the distribution of the warnings are not dealt within the scope of the project.

An analysis was conducted within MASSCRISCOM and in this analysis the need for being able to distribute more individualized weather/water warnings was clearly demonstrated. An individualization would make it easier for the individual actors, for instance the Fire and Rescue Services, County Administrative Boards, etc., to determine whether action should be taken or not within their area of responsibility. The consequence would be that a reduced or more limited amount of weather/water warnings would be distributed which would be a valuable contribution. The following possibilities for individualization of weather/water warnings to fulfil the requirements for issuing correct and relevant information have been introduced within the project:

- Selection of the geographic area for the distribution
- Choice of one or more types of warning (weather and/or water warning)



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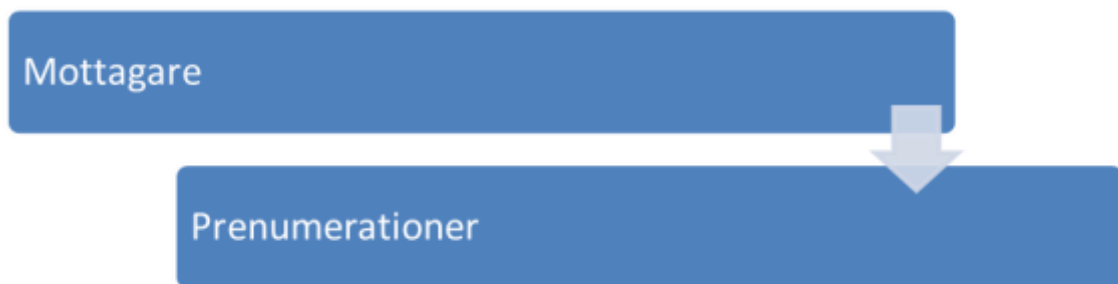
- Decision of the lowest appropriate level for the warning (warnings are classified in one of three levels depending on how serious the event is forecasted to be)
- Choice of distribution channel(s) i.e. SMS, e-mail, facsimile, script, etc.
- Agreement on period of validity of the subscription
- Choice of language (Swedish or English)

The warning portal is web based and handles the CAP standard, i.e. the standard which is adopted for the production system for warnings.

The warning portal is divided into two clients, an administration client and a subscription client. The first is the client that the customer arrives at after having logged in and had to indicate the distribution channels that the customer wishes to receive the warning information on. In the administration client, the existing subscriptions are managed and, alternatively, it is possible to enter the subscription client to create a new subscription.

### Warning portal – administration client

In the administration client can be found information about the recipients and subscriptions.



### Recipients

Under the title recipients in the administration client, the customer indicates to begin with details about the delivery routes which have to be managed when setting up one or more subscriptions:

- Available distribution channels for choice
  - E-mail
  - Facsimile
  - SMS
  - Script (xml-fil baserat på CAP-standard)
- For each distribution channel indication of address and/or number
  - Mobile telephone number
  - Facsimile number
  - E-mail address



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- For each distribution channel the language(s) has to be indicated
  - Swedish
  - English

## Subscriptions

Under the title subscriptions in the administration client, the existing subscriptions (if some subscriptions have been made already) and there is also an opportunity for setting up new ones.

Under subscriptions the system allows the customer to:

- create a new subscription
- make editorial changes in the existing subscriptions
- delete existing a subscription(s)

Each customer can have the amount of subscriptions he chooses.



The screenshot shows the SMHI WARNINGS PORTAL interface. It features two main tables: 'Subscriptions' and 'Receivers'. The 'Subscriptions' table has columns for Name, Description, Active from, and To. The 'Receivers' table has columns for Dispatch, Address/number, and Language. Both tables include a green plus icon for adding new entries and a red minus icon for deleting existing ones.

Subscriptions			
Name:	Description:	Active from:	To:
Fredrik Linde	MCC	2011-04-06	2011-12-31

Receivers		
Dispatch	Address/number	Language
Mail	fredrik.linde@smhi.se	Swedish
Mail	fredrik.linde@smhi.se	English
SMS	0709686868	Swedish

Image of the administration client file system with indications of receivers and subscriptions.

## Warning portal – conscription



Through the administration client, the customer has access to the subscription group, the same entrance is applicable to both new subscriptions and existing subscriptions. When new subscriptions are set up (and existing ones are edited), the five step flow process seen below has to be followed.



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***Classification of the subscription and period of validity***

When a subscription is set up, the name will be registered and supplemented with a simple description of the person so that a customer who has several subscriptions can distinguish between these. Each subscription must also have the period of validity of the subscription, i.e. when it starts and when it will end. If a customer is only interested in certain warning parameters during a certain period of the year, then this can be steered through the period of validity.

***Details for the selection of the geographic area for the distribution***

To simplify for the customer when selecting a geographic area, there are a number of details for the indication which can be chosen, if so is wished.

- Towns
- Counties (regions)
- Lakes
- Roads
- Railways

In supplement to this, the customer can also chose the small warning districts which SMHI has divided the country into.

- Land districts
- Sea districts

***Selection of the geographic area***

In the present version of the MASSCRISCOM developed methods and interfaces (warning portals) for individualized weather/water warnings, the customer can only chose the geographic area on the basis of the small warning districts, which SMHI has divided Sweden into. In a future version, the customer should be able to chose a specific position (latitude/longitude and/or a place on the map), other types of defined areas (counties and municipalities) or any chosen area in the form of manually edited polygon. The aim of fine tuning the geographic area further is to allow the customer to get warnings only affecting the area he is interested in. For the competent national authorities, a CCC or other public institutions, the whole of Sweden with adjacent sea areas will be chosen to ensure that for instance the database of the CCC will always be up-dated with correct information for the whole country.

***Choice of one or more types of warning (weather and/or water warning)***

SMHI is responsible for issuing about 15 different types of warning, for instance high flows and levels of water, heavy rain and thunderstorms. Some customers are interested in all the warning information while others are only interested in some single types or a few, depending on how the customer can be affected. The warning portal will allow the client to choose one or more or all types of warning. For each type of warning, it is possible to indicate if only warnings of one or more of



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the warning classes are requested, i.e. the established three warning classes for each type of warning which have been defined and indicate the estimated risk and effects in society.

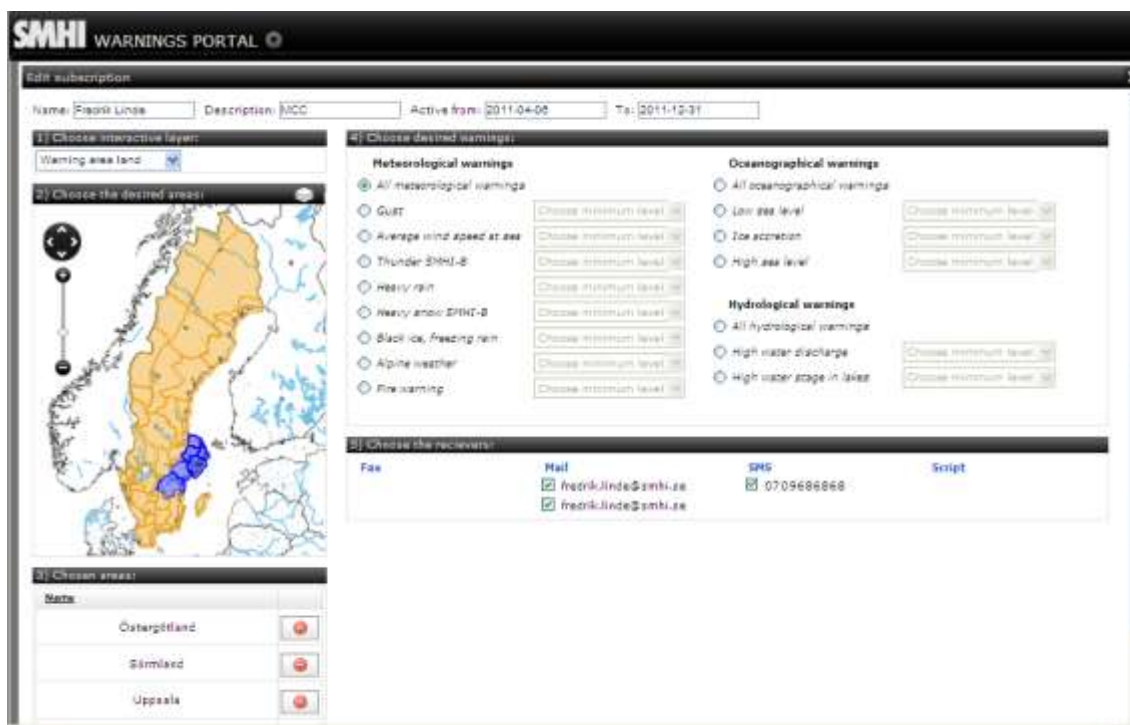
In the version of the warning portal elaborated by MASSCRISCOM, the customer is recommended in all issued individualized warnings to study the SMHI website. An example of the warning information sent by SMS is provided in the following:

“Warning for heavy rain, Warning class 2 heavy rain. For more info see: <http://www-tst.smhi.se/vadret/vadret-i-sverige/Varningar.>”

This link in the SMS ensures that the customer always gets the latest, up-dated information which is on the website. SMS, e-mail, etc. allow the involved partners to get information much faster.

### **Choice of receiver of the warning**

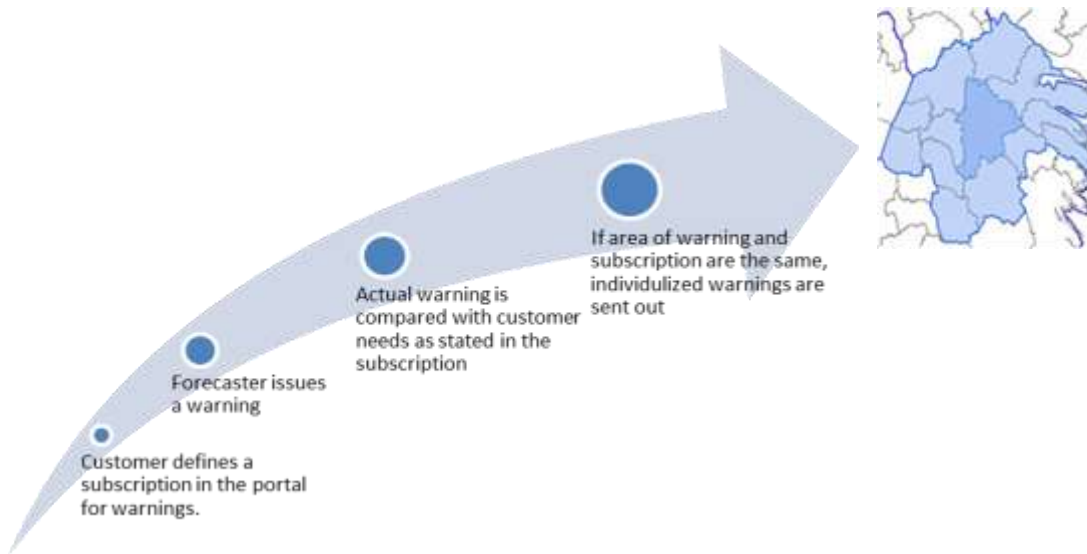
One or more distribution channels, which have been indicated in the administration client, are connected to each subscription. A customer can thus have several conscriptions which consist of several receivers of the message or warning.



*Example of a customer conscription when the customer has chosen meteorological warnings for the Counties of Uppsala, Stockholm and Östergötland.*



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*Flow chart introduced with the warning portal*

The individualized warnings allow the affected actors within the crisis management system and a large part of the public to receive the warning information at a much earlier stage, more related to a specific geographic area and presented in a way which is easier to understand. A more efficient warning system will make it possible for society to reduce or avoid the consequences of natural disasters to a much greater extent than before. The improved early warning which individualized warnings lead to will for example lead to a higher level of preparedness for the public services, but also for the public in general, and reduce the vulnerability of society

At present, the warning portal manages the official warnings which SMHI issue for Sweden and the adjacent sea areas. These warnings have been established in collaboration with the relevant operational competent authorities and other actors in the crisis management system. Type of warning, warning criteria and now also the possibility for subscription to individualized warnings fill in other words most requirements of the public and authorities in Sweden. An interesting future approach would be to combine the official warnings with warnings for which the criteria have been set completely by the customer, and this is a question which should be studied further.

## Statistics and evaluation – learning from incidents

The CCC will in its database have a considerable amount of information about an event. It is important that it will be made possible to fetch extract statistics and other data from it to make it possible to analyse and evaluate how the crisis was managed. This will naturally also be valuable for MSB in its work on learning from accidents and incidents.



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## Literature List

The Federal Ministry of the Interior (Germany), 2010: The Single Government Service Telephone Number 115 (From the D115 Project to the D115 Service)

Greg Fitzpatrick, 2006: Report on the Information Service 311 in USA in a Swedish Perspective

Stephanie Strom, 2005: After the Hurricanes, Support Grows for 211 Call Service, November 20, 2005, New York Times

Australian Government Information Management Office, 2010: The AGIMO Government 2.0 Primer (Government 2.0 scenarios and tools for Australian Government Agencies), version 1.0

Official journal of the European Union, L 317/46, 03/12/2009, p. 0046–0047

Krisberedskapsmyndigheten, 2006: Grounds of Crisis Communication

Jesper Falkheimer & Mats Heide, 2006: Authorities Crisis Communication With Ethnical Minorities (A Study On Building Relations in a Multicultural Society) part 1

Liad Weiss, Anat Rafaeli, Nira Munichor, 2008: Proximity to or Progress toward Receiving a Telephone Service? An Experimental Investigation of Customer Reactions to Features of Telephone Auditory Messages (extended abstract), *Advances in Consumer Research* Volume 35

The (Swedish) National Food Administration (Tom Andersson, Anette Hulth, Lars-Olof Hensjö), 2011: Towards A National System for Daily Surveillance and Analysis of Gastroenteritis (Project abstract)

SOS Alarm (Rickard Hellgren, Bert Lundmark), 2007: Pre-study on a Society Number 11x,

Mats Eriksson, 2006: To Create and run a Crisis Web Organization,

The Swedish Post and Telecom Agency, 2010: Compilation of the Swedish Numbering Plan for Telephony

Mikael Karlsson, 2010: Net-journalism in Crisis Situations – Information or Desinformation? A Popular Scientific Compilation, University of Karlstad

Jenny Erholm, PKMC-Nytt from The County Council in Västra Götaland, Sweden, Dec 2005: Lessons Learned – The Terror Attacks in London

Handisam – Swedish Agency for Disability Policy Coordination: Guidelines for Making Information Accessible

Christer Brown, Fredrik Fors, Susanne Kallin (the Swedish National Defence College), 2009: Cooperating and Sharing Information – in Threat and in Crisis

Swedish Civil Contingencies Agency, Swedish Radiation Safety Authority, et al, 2010: Alarm and Cooperation Platform for Communication and Joint Situation Awareness for the Swedish Preparedness in Nuclear Accidents

Jesper Falkheimer, 2007: Communication in Areas of Plurality

Final Work Package Four and Five Report

on

A Crisis Communication Centre (CCC) Model



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Jesper Falkheimer, Mats Heide, 2008: Crisis Communication in a Global Society

Anna Olofsson, 2008: Does the Message Reach Thorough? Crisis Communication in a Multicultural Society

Petter Hellmin, Kristoffer Piirimets (2009): Catcher in the Rye, A Focus Group Studie on the Publics Thoughts About Society's Alarm Services Now and in the Future

Mats Eriksson, 2009: When, how and why we are calling SOS? – A citizen's perspective on the alarm feature 112 of the mobile communications landscape

Laila Naraghi, 2009: Can Crisis Crawl? A Conceptual Analysis of "Crawling Crisis"

Marku Haranne, Janne Koivukoski, 2010: Development on Emergency Response and Disaster Management in Finland

Rainer Åkerblom, 2010: Rescue Service in Finland

Leysia Palen, Sophia B Liu, 2007: Citizen Communications in Crisis: Anticipating a Future of ICT-Supported Public Participation

Lisa Ekevärn: Crisis Management and Crisis management Functions – A Research Overview

Swedish Civil Contingencies Agency, SOS Alarm, National Police Board: Establishing a Special Information Number, Report on an Assignment from the Government (Dnr: Fö 2010/153/SSK)

Per E Siljegren, Anders Östman: Architecture of Joint Situation Awareness in Crisis Management, 20 February 2007

Jonas Landgren, 2010: Documentation Practice in Crisis Management (slideshow)

Swedish Civil Contingencies Agency, 2010: Cooperation for Communication and Joint Situation Awareness – Towards a Better Preparedness in Occurances, (Fact Sheet)

Jesper Falkheimer, Lars Palm, 2005: Crisis of Confidence – Communication Strategies Before, During and After

SOS Alarm (Thomas Stenbäck), 2009: Improved Joint Situation Awareness Through Efficient Information Exchange In Day To Day Operations and Disaster Management

Larsåke Larsson, 2008 (Örebro University): Crisis and Lessons Learned, Crisis Communication från Tjernobyl to the Tsunami

Heléne Rosdahl, Frida Sjösten, 2010 (Örebro University): Crisis Communication for the Future – An Analysis of Swedish Case Studies Within the Crisis Communication Area

Jesper Falkheimer, Mats Heide, Sven Hamrefors, 2006: Crisis Communication – To Improvise Under Chaos

SOS Alarm, 2011: 112 in Sweden, Activity Report Regarding 2010

The Swedish Government: Improved Crisis Preparedness For Safety's Sake, Prop. 2007/08:92



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John Harrald, Theresa Jefferson, 2007: Shared Situation Awareness in Emergency Mitigation and Response

### **Links:**

U.S Information number 112: [www.211us.org](http://www.211us.org)

Red Cross: [http://www.familylinks.icrc.org/wfl/wfl\\_jap.nsf/DocIndex/locate\\_eng?opendocument](http://www.familylinks.icrc.org/wfl/wfl_jap.nsf/DocIndex/locate_eng?opendocument)

U.S. Information Number 311 in Minneapolis: <http://www.ci.minneapolis.mn.us/311/>

U.S. Information Number 311 in New York City: <http://www.nyc.gov/apps/311/>

Ushahidi: <http://haiti.ushahidi.com/>

Site about Service Level Standard: <http://easierlang.com/>

National Web Portal for Swedish Authorities: [www.krisinformation.se](http://www.krisinformation.se)

National Web Information Site for Danish Authorities: [www.kriseinfo.dk](http://www.kriseinfo.dk)

National Web Information Site for Icelandic Authorities: [www.almannavarnir.is](http://www.almannavarnir.is)

Google Flu Trends: <http://www.google.org/flutrends/>

## **References to Standards**

In order to make the information in the database possible to use for different purposes and for the analyses as well as to set interfaces for import and export of data, the expressions, information quantities and formats must be standardized to achieve uniformity and similar use in the whole database. Much of the information will be fetched from other systems and it must also be possible to export it. Different standards for warning messages and for communication between crisis management units have already been established. It is therefore necessary to have knowledge about the existing standards, to take these into account and to implement them. The standards that will be relevant will depend on for instance local conditions and the other information sources and information producers which will be involved in the creation of a CCC.

To clarify which standards that are relevant, which conditions they set for a basic database and which needs for converting and supplementing data in connection with import and export is one of the basic activities to be carried out in the designing of databases for a CCC. In the following, some examples of standards which may be used for a CCC are presented. There will also be some examples of considerations which will have to be made in respect to the earlier defined basic characteristics, i.e. geographic position/area, time/duration and type/category.

### **CAP – Common Alerting Protocol**

CAP is an open protocol for transferring all types of digital warning messages and notifications. The protocol is not defined for any particular communication technology but is instead adptable to all modern communication protocols for instance through Web and Internet. The protocol defines how an "alert message" is created in the form of a xml-file which can be transferred through an appropriate technical solution. It is used inter alia for distribution of weather warnings. By normalizing alert



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data across threats, jurisdictions and warning systems, CAP also can be used to detect trends and patterns in warning activity, such as trends that might indicate an undetected hazard or hostile act. From a procedural perspective, CAP reinforces a research-based template for effective warning message content and structure.

CAP was elaborated within the framework of OASIS (Organization for the Advancement of Structured Information Standards), a non-profit organization which drives the development, convergence and adoption of open standards for the global information society: [www.oasis-open.org](http://www.oasis-open.org)

CAP 1.2: <http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html>

### TSO – Tactical Situation Object

TSO is a proposed standard for exchanging information between systems during disaster and emergency management. Thus, a TSO can describe all sort of events, the resources engaged in the operation and the tasks in progress. The applications handling the TSO present the information to users in their own language, applying their own set of symbols. The first version of the TSO was defined in the frame of the European Union project Oasis (Open Advanced System for dISaster & emergency management [www.oasis-fp6.org](http://www.oasis-fp6.org)) in 2005; then the next versions have been discussed and set up in the CEN Workshop (the 'Information System for Disaster and Emergency Management' workshop). The output from the workshop is composed of 2 documents, part 1: Message structure and part 2: Codes for the message structure (TSO Dictionary) <http://www.tacticalsituationobject.org/index.html>

IST (Information Society Technologies): <http://cordis.europa.eu/ist/home.html>

CEN/ISS Workshop on Information System for Disaster and Emergency Management – (W/ISDEM): <http://www.cen.eu/CEN/sectors/sectors/iss/activity/Pages/ws-isdem.aspx>



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