



The information and warning system in the Grand Duchy of Luxembourg Mr Charles Bruck

Having regard to the tiny size of the country, the first-aid organisations in Luxembourg are organised so that only one exchange of reception of the emergency help calls is necessary. This exchange, under the responsibility of the Luxembourg Civil Protection Authority, is accessible under only one telephone number to know the European single emergency telephone number 1 1 2. From this exchange all the national first-aid organisations are alerted.

At communal level there are 250 voluntary firemen's brigades with a manpower of about 8000 units. The municipal fire brigade is independent of Civil Protection and reports to the Ministry of Interior.

The brigade of first-aid volunteers ambulance personnel and rescue workers is composed of 2300 volunteers based in 25 regional centres.

The competencies and the speed of these units of intervention are appreciated unanimously. Their effectiveness depends on a major part of a warning system, resting on increasingly advanced technologies, that I will explain below.

Indeed, a call to the 112 causing an intervention of the assistance units starts a technical and computer operation cascade. Consequently the warning system of the Civil Protection constitutes a vital element of the system of emergency help. We distinguish between:

- the warning of the assistance units and
- the warning or the information of the population.

The warning of the assistance units can be carried out via various methods to be known:

- by pager
- by warning sirens
- by radiocommunication
- by telephone.

The warning of the assistance units, listed above, is carried out in theory via the own network of transport radio of Civil Protection. Pager are used to alert either individually, or by group, the volunteers ensuring the standby duty.

Recently we introduced the possibility of transmitting messages with alphanumeric towards receivers of the new generation equipped with liquid crystals screens with multiple-line.



By a complementary equipment, to be inserted in the intervention vehicles, the «paging dated receiver», the information intended for the participants would be improved. Indeed, via the warning network, it would be possible to emit directly the necessary information in the cars, guaranteeing an optimum intervention.

Certain firemen brigades who are not yet equipped with pager are alerted by means of the warning sirens.

A third possibility of alerting of the assistance units is by means of radiocommunication. Indeed, the intervention vehicles on the way, mainly the ambulances in return of an intervention can be alerted by radio towards a new destination. A system of location of the cars of intervention, recently tested, should make it possible to improve the help chain significantly.

The fourth method, that of the last chance, consists in the public telephone network. A data bank contains all the data of the volunteers, therefore also those which are necessary for the warning by telephone (private telephone number, work, mobile).

With regard to the public information one differentiates between three possibilities:

- by siren
- by the media
- by the municipal authorities.

In the event of need at the time of situations of exception (p. e.g. chemical or radioactive pollution, floods) the warning respectively population information is done by the sirens. According to the warning tone the public can differentiate if this involves a warning or information respectively of a forewarning - in this case they are invited to connect their radio set.

Having regard to the importance of public information in the event of situation of exception a media information cell which is made up the tool of the decision-makers' communication to inform the population and to transmit it its decisions.

Other additional means of information for the population are currently in project phase to be known:

- Distribution of the messages directly on the teletext of the only television broadcast station
- To transmit messages on the information channels of the various collective antenna exploiters.

A third possibility which is mainly used in the event of important floods is to inform the municipal authorities concerned, which have to provide the distribution of the messages for their population.



Fire & Rescue Service of Fredericia, DK

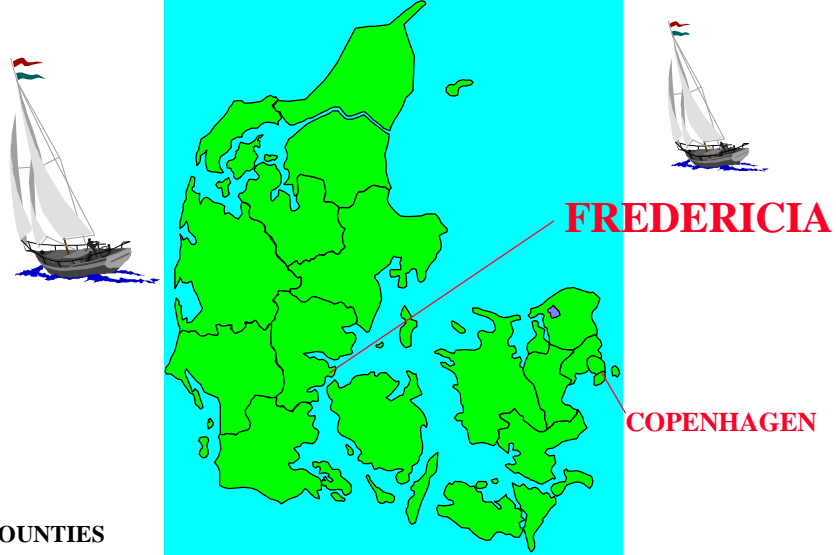
PRESENTATION BY:

IB BERTELSEN

ASSISSTANT CHIEF FIRE OFFICER.



Fire & Rescue Service of Fredericia, DK



14 COUNTIES

273 MUNICIPALITIES

Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

FACTS ABOUT FREDERICIA:

- **AREA IN HECTARES: 13.000**

- **POPULATION: 49.000**

- **EXPORT OF DANISH CRUDE OIL**



- **OIL REFINERY**

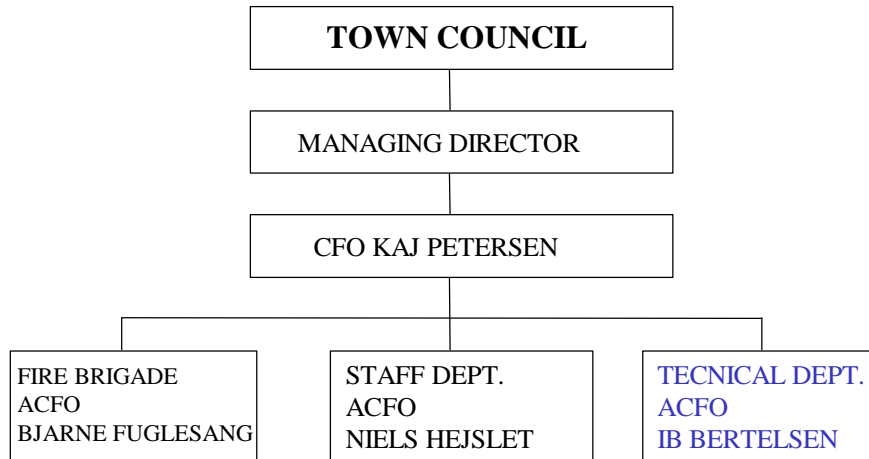
Fire & Rescue Service of Fredericia, DK

- **THE GREATEST PORT IN DENMARK**



- **STORAGE OF AMMONIA (70.000 T)**

Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

TECNICAL DEPARTMENT:

- FIRE SAFETY/ PREVENTION
- RISK ANALYSIS
- RISK ASSESMENT
- CONTINGENCY- & EMERGENCY PLANNING
- HAZARDOUS GOODS
- OIL SPILL RESPONSE

Fire & Rescue Service of Fredericia, DK

FACTS ABOUT KEMIRA DENMARK:

PRODUCTION OF FERTILIZE, approx. 900.000 tonnes

ABOUT 510 EMPLOYEES IN DENMARK

THE COMPANY HAS ITS OWN WORK FIRE BRIGADE WITH 60 MEMBERS .

THE WORK FIRE BRIGADE IS EDUCATED AND TRAINED BY FIRE AND RESCUE SERVICE OF FREDERICIA

Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

**KEMIRA HAS TO CALL THE MUNICIPAL
FIRE AND RESCUE SERVICE IN THE
FOLLOWING SITUATIONS:**

- **ESCAPE OF AMMONIA, NITROEOUS GASSES
& ACID**
- **IN CASE OF DECOMPOSITION**
- **IN CASE OF FIRE**
- **IN CASE OF DOUBT**

Fire & Rescue Service of Fredericia, DK

ABOUT ALARMSYSTEMS ON KEMIRA:

**THE COMPANY HAS DIFFERENT KINDS OF FIRE
ALARMSYSTEMS CONNECTET DIRECTLY TO
THE FIRE BRIGADE.**

**THERE IS A DIRECT TELEPHONE BETWEEN
KEMIRA AND THE FIRE BRIGADE.**

**IT IS POSSIBLE TO USE THE SAME RADIO
FREQUENCY ON SCENE**

Fire & Rescue Service of Fredericia, DK

FOR EACH TYPE OF ALARMS, THERE IS PREARRANGED:

- FIRST RESPONSE OF THE WORK FIRE BRIGADE.
- FIRST RESPONSE OF MUNICIPAL FIRE AND RESCUE SERVICE.
- FIRST RESPONSE OF THE AMBULANCE SERVICE.
- FIRST RESPONSE OF THE POLICE.

Fire & Rescue Service of Fredericia, DK

EARLY WARNING SYSTEM:



- THE CITY IS COVERED BY A NEW SYSTEMS OF ELECTRONIC SIRENS.
- THE ON SCENE COMMANDER CAN GIVE ORDER TO USE THE EARLY WARNING SYSTEM.
- INFORMATIONS TO THE PUBLICITY IS GIVEN BY RADIO BROADCASTING AND LOCAL COMMERCIAL RADIO.

Fire & Rescue Service of Fredericia, DK

Warning Sirens

Denmark's
Electronic
Warning System



Fire & Rescue Service of Fredericia, DK

Information from the Emergency Management Agency:

ALARM SIGNALS

The siren is sounded in residential areas and in public buildings. It is not sounded in the vicinity of schools, kindergartens, hospitals, etc.

SIGNAL 1 - GO INDOORS The siren will ring quickly and all night during the night hours for 15 seconds.	HERE IS WHAT YOU DO Go indoors. Close doors, windows and ventilation systems. Make sure that the people around you have done the same. Listen to Radio Denmark (DR) when you get to see what to do for measures in connection with a nuclear incident. Check the website of DR.
SIGNAL 2 - DANGER IS OVER One ring lasting 10 seconds.	The siren has done its indoor protection and leads to your daily routine.
STATIONARY SIRENS Sirens are sounded in case of a fire.	IN AREAS WITHOUT SIRENS There are areas where no siren is sounded.

The Sirens are tested on the first Wednesday of May

The Emergency Management Agency issues orders for the Ministry of the Interior and its task is to prevent human and material damage to property by co-operation with authorities or otherwise in times of peace and war. The Emergency Management Agency has drawn up contingency plans for major disaster situations, such as nuclear incidents. The siren is tested on the first Wednesday of May.

INDOOR PROTECTION

It is important that you get inside a house, etc., when the siren sounds – and that you make sure that the people around have done the same.

If you are at home, you should close all doors, windows and ventilation systems. Turn on the radio and listen to Radio Denmark (DR).

REMEMBER! These factory-installed siren is the only one you will be in the air side event. In certain situations you may have to stay indoors for a considerable period of time. It is therefore important that you have these things available at home:

- Factory-operated smoke maker with radio path.
- Properly marked fire extinguishers, water, etc. (check the expiry date for the CO2). Don't forget a fire extinguisher.
- Fire-aid kit, and, if available.
- Emergency lighting: Carline Flashlight.

IMPORTANT! In the event of radiation or chemical contamination you must stay at least away from the siren and be prepared to collect the food products.

HOW TO CALL FOR HELP

When you have help – call as quickly as you can.

Call 1-1-2

REMEMBER! In a disaster, don't use the mobile phone.

EVACUATION

In most emergencies the best protection will be to get away from the area. In certain cases the population or specifically designated areas will be evacuated.

Through the radio of the siren connected to the Police you will be told if your siren is to be evacuated.

YOUR OWN CONTRIBUTION

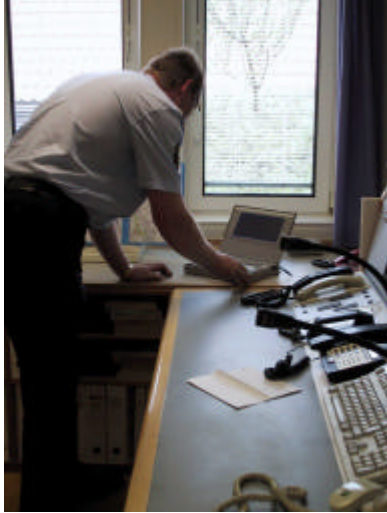
In any emergency it is important that everybody makes an effort. This can be your part.

- Keep the siren signals and what they mean.
- Make sure that other people are also familiar with it.
- Make sure that everybody sees and can hear the siren with a hearing handicap – someone close to the siren and located within 50 m.
- Leaving areas may be signalled through G.P. (Green Flashlight). The Danish-Club Protection League (Danish Red Cross) Danish Fire Corps.

IF YOU WANT TO KNOW MORE

From your local council you can learn more about the siren production and the siren with emergency plans.

Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

Decontaminationsroom at the hospital:



Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

Fertiliser fire accident in Fredericia

Statement from Kemira

Accident description:

The accident took place about 6 hours after a change of grade from fertiliser grade 540 to fertiliser grade 30. The change of grade started at 23.00 on the 23. of august 1996. The change proceeded according to the plan until about 05.00 on the 24. of august 1996. Then problems with the spherodiser nr. 3 in production line 1 occurred. At 05.40 a fertiliser decomposition was detected in the spherodiser nr 3 which led to a shut down of the fertiliser plant and a emission of nitrous decomposition gases to the environment, mainly through the plant stack. The decomposition and the thereby caused local fire was extinguished by the fire brigade within 1 hour.

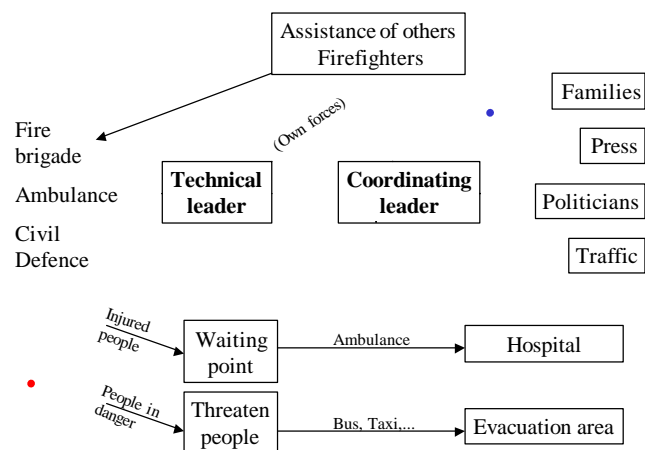
At 09.45 an again increased release of nitrous fumes was detected from the stack. A new fertiliser decomposition was localised to spherodiser nr 4 and it was extinguished by the fire brigade at 11.00 on the 24. of august 1996.

Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

The one scene commander:

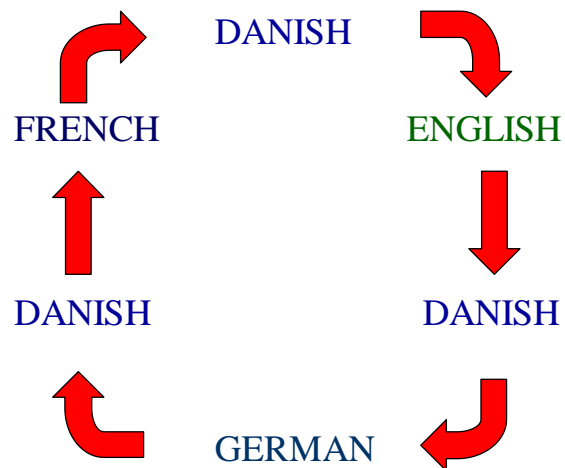


Fire & Rescue Service of Fredericia, DK



Fire & Rescue Service of Fredericia, DK

Loop of information by the local commercial radio:



Fire & Rescue Service of Fredericia, DK





Swiss alarm system

Mr Daniel Haefliger

Objectives of an Alarm . . .

CIVIL PROTECTION
SWITZERLAND 

Everybody is informed

- in due time
- correctly
- what is to be done first



1



Warning . . .

CIVIL PROTECTION
SWITZERLAND 

**A warning is addressed
to authorities only.**

**It should be communicated
as soon as possible in
order to enable the
responsible authorities
preparing necessary
actions.**



2

Alarm of the Public . . .

CIVIL PROTECTION
SWITZERLAND 

1. **“Wake up“** of the
people with siren sound.



stationary sirens:
ca. 4'160

2. Information and directives
concerning **“what to
do“** is given on radio.




mobile sirens:
ca. 3'000




3



How fast . . .

CIVIL PROTECTION SWITZERLAND 


The municipalities are responsible that the public can be informed (cantons' legislation).


Time lapse: 

- **max. one hour** after an alarm is issued by the national emergency centre (NEOC) to the police
- **max. one hour** for the preparation of the technical readiness for alert in the municipality

4

General Alarm . . .

CIVIL PROTECTION SWITZERLAND 

 (1 minute)

Announcement of behavioural instructions or official information via radio

Release	In case of imminent threats
Behaviour	<ul style="list-style-type: none">- Listen to the radio- Follow official instructions- Read the leaflet "How to act in an imminent threat" (last pages of the telephone directories)- Inform your neighbours
End of danger	Communication by radio or by the local authorities

5



Water Alarm . . .

CIVIL PROTECTION
SWITZERLAND

20 Sec. 10 Sec. 20 Sec. 10 Sec. 20 Sec. 10 Sec. etc.

**Announcement of an imminent danger
of flood in the neighbourhood of a dam or
barrage**

Release	In case of leakage of a barrage (automatic release)
Behaviour	<ul style="list-style-type: none"> - Evacuate immediately the endangered area - Follow (official) instructions on leaflets or other official directives
End of danger	Communication by radio or by the local authorities

6

Nuclear Alarm . . .

CIVIL PROTECTION
SWITZERLAND

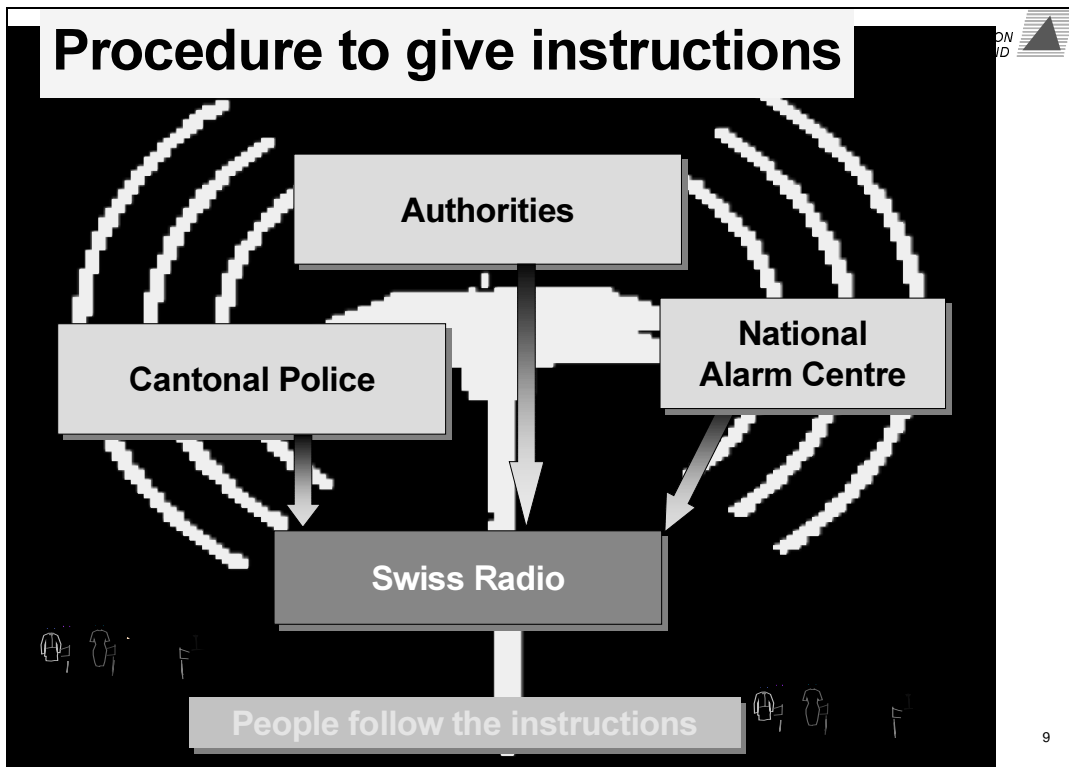
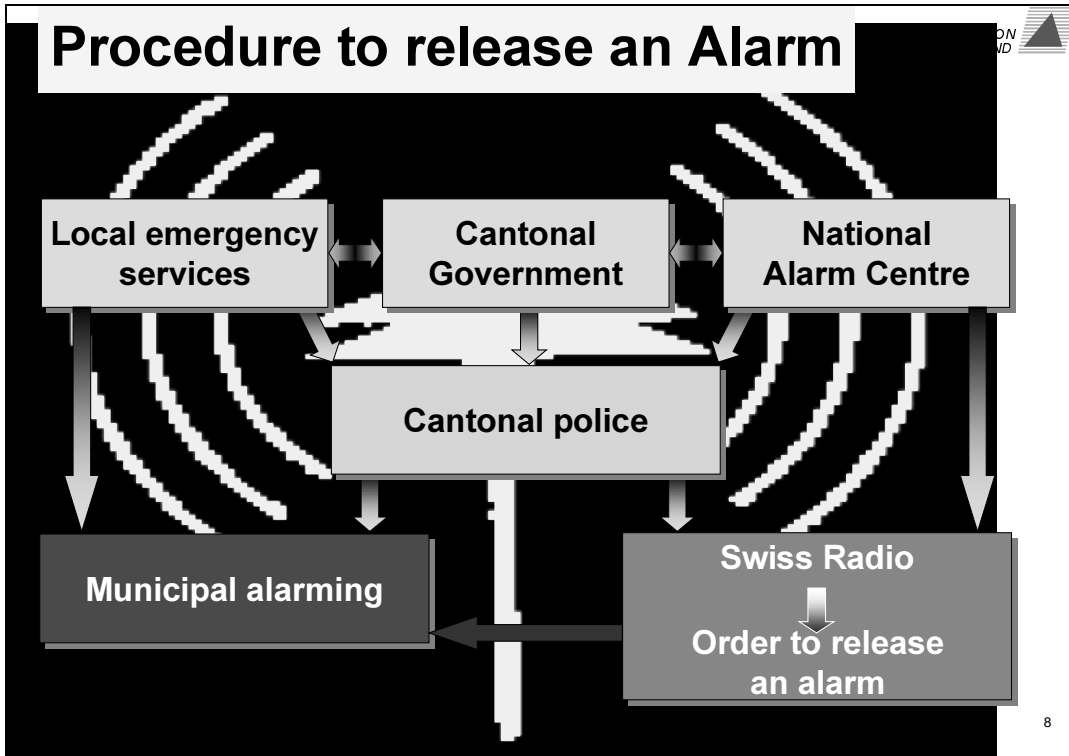
(Zone 1 and 2 of nuclear power plants)

12 Sec. 12 Sec. 12 Sec. 12 Sec. 12 Sec.

**Announcement of release of radioactivity
in the vicinity of a Nuclear Power Plant**

Release	In case of a nuclear accident
Behaviour	Go to the cellar or shelter and listen to the radio
End of danger	Communication by radio or by the local authorities

7





Future Requirements . . .

CIVIL PROTECTION
SWITZERLAND 

- **Early warning systems for the public (reaction time < 15 Min.)**
- **Direct communication link from intelligence services to National Emergency Operation Centre (NEOC)**
- **System/s to inform the public on "What to do" (one way communication)**
- **Obligation for radio and TV stations to broadcast official information and instructions on their channels (by law)**
- **System/s to inform people staying in shelters**

10



CIVIL PROTECTION
SWITZERLAND 

No particular emergency measures are prepared

Potential danger



Radio



- Information by authorities about incident
- Instructions "what to do"



People follow the instructions

Direct danger



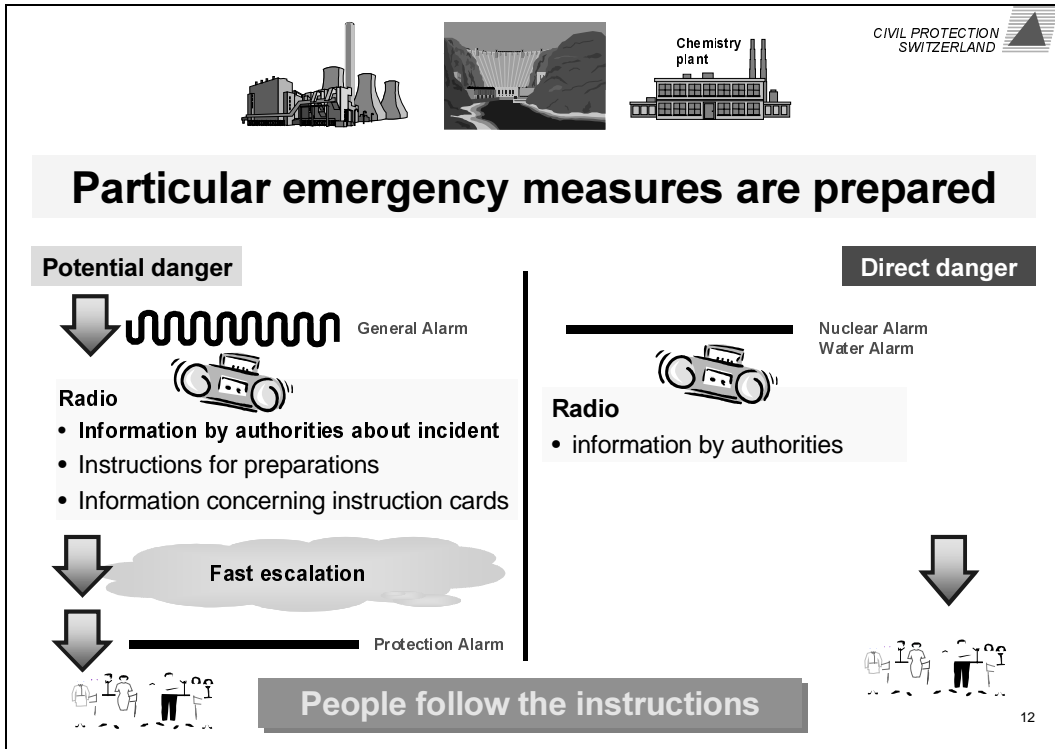
Radio



- Information by authorities about incident
- Directives for immediate protection



11





Results of the group work

Working group 1

In this working group participants discussed and considered whether it would be useful to improve harmonization in warning and alarm systems. For example, how could authorities make sure that a certain signal or sign would cause a similar reaction in different countries?

- Is there a need for harmonization of technical devices for warning and alarming the public?*
- Types of signals (existing, indoor-outdoor, need for standardization)?*
- Is there a need for co-operation between countries?*
- What has already been done?*
- Is there any need for improvement or regulation?*

Results and conclusions in brief:

- Common warning signals that mean the same in all Member States should be taken into use.
- Acoustic signals seem to be best for warning and informing people but other alternatives should also be investigated.
- There should be a common day for testing warning systems, for example 11 February.
- Local signals should be admissible.
- Signals should be different from workplace signals.
- Studies should be carried out to decide on the best type of signals and the public should be educated to recognize those signals.
- Short-term solutions need to be cost-effective and long-term solutions need to be planned thoroughly.



Working group 2: *Organizational matters*

In this working group participants discussed the organizational problems when implementing a national warning system. Who should be responsible for developing and maintaining a national warning system? What authorities or other bodies should be consulted?

- *Organizational problems when implementing a national warning system*
- *Who deals with what?*
- *Who to consult?*
- *Possible co-operation*

Results and conclusions in brief:

- Implementing and maintaining a national warning system should be the responsibility of central government.
- Consulting other countries and avoiding their mistakes is essential.
- Communication must be open and clear.
- Environmental lobby.
- Broadcasters have a key role in warning and informing the public.
- Specifications must be clear.
- The public must understand their roles and responsibilities.
- The public in the vicinity of a site need to be trained to be vigilant and not to wait for a siren.



Working group 3: *Possibilities offered by modern technologies and media in warning and informing the public. How can they be utilized efficiently?*

Results and conclusions in brief:

- There must be different technologies and media or at least different methods for different types and different stages of accidents and crises.
- Technologies and devices used for warning and informing the public should be harmonized, if not standardized.
- There are high expectations of future technology and innovations (digital TV, internet, new mobile networks, satellite communication etc.) but it is important to remember that technology alone cannot solve everything.
- Experiences and pros and cons of national and local experiments with new technology and new devices should be shared and mistakes already made should be avoided.

Working group 4: *Possibilities and needs to use modern technologies and media for the requirements of special groups (the old, people with disabilities, tourists).*

Results and conclusions in brief:

- The problem is that the needs of minor groups are also politically minor issues.
- Unfortunately it seems that accidents must happen before somebody acts.
- Possibilities:
 - *Build on existing legislation.
 - * 5-year EU programme - "Information to the Public".
- Technology does not solve everything, therefore:



*rescue services must be able to locate the disabled one way or another.

*nursing staff must also be trained.

*Countries that have already experimented with new technological devices for helping special groups should be consulted. Pros and cons should be shared and mistakes made must be avoided.

Remarks

In future, the world will be increasingly dependent on information technology. People's mobility, need for information and independence will increase. There are great expectations of future capabilities of technical devices for informing and warning the public in accident situations. The presentations suggested that new technology and new technical systems will open new possibilities for warning the public and make it possible to take more account of special groups (old people, tourists, people with disabilities), provided that everyone receives equal treatment and everybody receives the information they need at the same time. On the other hand, competing systems for warning the public and saving lives are available and will increasingly be offered, but systems should be constructed on the basis of the problems to be solved, not the other way round.

Based on the presentations and the questionnaire sent out in advance, warning systems and practices vary in different countries, and for example warning signals (e.g. sirens) are not standardized/harmonized. There is a clear need for this.

For the above issues to be addressed, EU Member States need to need to co-ordinate their activities and in future attempt as far as possible to harmonize procedures and systems for informing the public in hazardous situations. Various new technical systems and aids have already been experimented with nationally and locally, and the experience gained in these trials needs to be taken into account in future planning. Workshops of this type are excellent for exchanging information and experiences between experts from



different countries and create a good basis for further work on the “Information to the Public” project, which is necessary for the creation of a common secure future.



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QUESTIONNAIRE SUMMARY

Preface

A questionnaire was sent to the membership countries along with the invitation and the registration forms. The idea was to clarify the various technical systems used to warn and inform the public in different countries. On the other hand we wanted to find out about the renewal projects and plans of warning systems as well as the prospects of the future.

The questionnaires were scarcely answered. Most of the answers were received after asking for them again. The delay and total missing of the answers is probably a sign of the questionnaires not finding the right address in the target country. Also the administrative responsibility in this field is divided to various levels in the organization, even into different organizations.

Anyway, we managed to make a summary that will hopefully be acceptable background material for the Kuopio workshop. An European survey can be made based on these answers, yet noticing that we did not get information from all membership countries.

General observations

- different countries have quite different systems
- some countries have no nationwide warning system at all
- using radio and TV has a significant role in all the answers
- the voice signals used in outdoors warning systems differ notably from one country to another, there are quite a few different signals used in the EU
- the instructions given to the public are much the same in every country
- there seems to be no technical renewals going on
- there are expectations on the future using of digital TV, internet technology and mobile phone networks

The voice signals used in outdoors warning systems should be standardized in EU. A research should be made on how well the citizens know the signals and how they react when hearing them. A presumption is that people do not recognize the signals and would not react, if the system were really used.

Some instance should deliberate the real possibilities to benefit from the new techniques. A preliminary clarification on the application should be made.



Summary question by question

1) *Enumerate and describe briefly the public information, warning and alarm systems for major accidents and disasters (nuclear, chemical, floods, earthquakes etc.) that are in use in your country.*

Country	Answers
Austria	There is one Austrian Warning and Alerting system with about 7000 sirens and one Early Radiation Warning System with 340 measuring stations in a maximum distance of 15 km from each other.
Bundesland Bayern	
Denmark	<p>The Civil Defence is establishing a new warning system, police district by police district across the country, in the period from 1991 to 1993.</p> <p>The system includes ab. 1 100 new electrical and back-up powered sirens with associated command and control systems. With these sirens it is possible to alert upwards of 80% of the Danish population in the event of accidents or disasters. The remaining 20% will be alerted by supplementary warning media.</p> <p>The sirens can also be heard indoors throughout the area of coverage</p> <p>The system are able to send messages electronically to Radio Denmark so that any further information on the relevant risk situation can be transmitted via radio and TV without delay.</p>
Finland	In Finland the warning system is based on the outdoors warning systems and on the RDS-controlled news flashes on the radio. Also the text TV is used. There are about 1500 outdoors alarms and they cover cities and population centers. Scattered settlement areas have plans of using speaker cars. The outdoors alarms are switched on either from the emergency centers, by a local activation at fire stations or from the war-time command and control rooms. The control system of the alarms will be renewed along with the Virve- and emergency center projects by year 2006. (Virve = Name of the new TETRA –based radionetwork project)
Italy	<p>1) In Italy there are 3 type of events defined as Type "A", Type "B", Type "C", :</p> <ul style="list-style-type: none">• A = Natural or man-made disasters that can be faced by interventions operable by any single public administration using ordinary means and resources.• B = Natural o man-made disasters that can be faced by interventions



Italy	<p>operable by different public administrations or organizations using ordinary means and resources</p> <ul style="list-style-type: none">• C = Natural or man-made disasters , that can be faced by interventions operable by extra-ordinary means and resources due to the severity or geographical extension. <p>In Italy there will be prepared emergency plans for the main risks, natural and non (see in enclosure the description of the protection Italian civilian). There will be three levels of compilation foreseen (national, provincial, municipal) where reported measures for warning, alarm and news to the community will be effected.</p> <p>Uptoday, standard procedures for compilation of plans don't exist and every local government can decide the own best procedures to apply.</p>
Luxembourg	<p>The population in Luxembourg is warned by an outdoor warning system in case of major accidents. A simultaneous information is ensured by the media (radio, TV) via the "Service Information et Presse" of the Ministry of State.</p>
Netherlands	<p>There is a country wide warning system in the Netherlands since 1950's. The old elektro-mecanical sirens have just been put out of order. The new national warning system, installed under the direct supervision of the Ministry of Interior, has taken over their task since its inauguration in the beginning of June 1998.</p> <p>The systems covers all kinds of emergencies which might cause nuisance to the public. It functions in war as well as in peace time. It is made to reach all people outside.</p> <p>The new system consists of 45 regional control stations and appr. 3500 sirens. There is only one signal in use. The siren signal is given during 15 minutes.</p> <p>Further information will reach the public though the local radio and/ or television network. There is no standard text for loudspeaker warning. Some regions have a standerd tape on the local radio which is started at the moment when the sirens are triggered.</p>
Norway	<p>The system for warning and alarming the public is built up with pneumatic sirens in Norway, and are built and developed through the years after the second word war and up till to day.</p> <p>For controlling the sirens we have three different systems.</p> <ol style="list-style-type: none">1. Lines with local commands and signal release points2. VHF radio system with a control receiver on each site covering mainly the south of Norway.3. RDS radio system with a control receiver on each site covering the middle and north of Norway.



Norway	<p>To connection with use of the signal «important announcement - listen to the radio» it will be read a message over radio and instructions given over text TV. The same system will be used for nuclear fallout warning and other accidents and disasters.</p>
Sweden	<p>In Sweden there are three major systems for warning and information. The basic system is broadcast over the FM broadcasting network. There are two different levels of priority for messages in use, warning message, which is sent immediately via all radio and television networks and information message where there are no demands for immediate broadcast.</p> <p>Then there is the general outdoor warning system, which is installed in about 250 municipalities and generally concentrated to towns and villages with more than 1000 inhabitants. The system is used in both peace and wartime and includes about 4800 sirens.</p> <p>When using the outdoor warning system the signal is immediately followed by a warning message on radio and television.</p> <p>The third system is the RDS based indoor warning system that is used in the inner emergency planning zones around the four nuclear power plants. Special RDS receivers have been developed and approximately 25,000 receivers have been installed. For one of the nuclear power plants indoor warning is also sent by the public telephone system but this system is now outdated and won't be used after 2003.</p>
Switzerland	<p>Alarm of the public is based on sirens.</p> <p>There are about 4'000 stationary sirens installed and about 3'000 mobile sirens available. With this amount of sirens it is possible to alarm more than 95% of the Swiss population.</p> <p>An alarm can be released either by local emergency services and authorities in case of local dangers or the national emergency operation centre (NEOC) in case of a large-scale danger (e.g. nuclear accident).</p> <p>Warning of the local authorities in case of large-scale dangers is foreseen prior to an alarm, if there is enough time available or the circumstances require it. A warning message is distributed from the NEOC to the local authorities via the cantonal police headquarters.</p>
United Kingdom	<p>No nationwide outdoor warning system in place.</p> <p>With the exception of perhaps flooding, peacetime disasters, are out-of-the-blue events with no prior warning and where the immediate effects are local but then can spread to neighbouring areas. Therefore the procedures for alerting the public would expand progressively from the area local to the incident, to those likely to be affected. In the UK, this would be achieving using well-rehearsed local arrangements between the emergency planning agencies, police, fire and ambulance services, and local and regional radio and television networks.</p>



United Kingdom	<p><u>Chemical</u> A variety of methods may be used to issue warnings to the public such as dedicated automatic systems, local radio broadcasts and police cars with loud hailers.</p> <p><u>Nuclear</u></p> <p><u>Biological</u> No national system in place</p> <p><u>Wartime</u> <u>Air Attack warning</u> The UK Home Office commissioned the British Broadcasting Corporation (BBC) to develop the NAWS (National Attack warning system) which is based around the existing broadcast transmission arrangements which already cover 96% of the population. In the tension the system provides in addition, a back up distribution by private telephone lines and other circuits, to give resilience. It would use remotely controlled switching equipment to connect the warning centres to dedicated transmitters to ensure that a warning message issued within 60 seconds. Use of the remote switching also gives ability to "steer" the warning signal along alternate paths in the event of damage to the networks following an attack.</p>
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2) If there is a outdoor warning system, how do you start it? Describe briefly the alternatives, control connections and places from where the launching can be done.

Country	Answers
Austria	The Austrian Warning and Alerting system can be started: a) By the Federal Alarm Center or the alternate Federal Alarm Center b) by the Provincial Alarm Centers or the alternate Provincial Alarm Centers c) by the District Alarm Centers d) in rural districts by the local volunteer fire-brigade stations
Bundesland Bayern	
Denmark	The sirens can be remotely controlled from police stations manned around the clock (alarm centres), and local CD (Civil Deference) command&control centres as well
Finland	The outdoors alarms are switched on either from the emergency centers, by a local activation at fire stations or from the war-time command and control rooms.
Italy	-
Luxembourg	The outdoor warning system in launched by the emergency call center 112.
Netherlands	The command of the sirens is completely decentralized over the fire services regions. The actual use in emergency situation will be in the hands of the local authorities as being first of all responsible for local disaster relief operatoins. The sirens can be triggereg in every number from on to all sirens in the region.
Norway	The signal can be started with radio signals either VHF(DTMF) or with a coded RDS signal. The launching can be done for the entire country by RDS signal (Not fully developed yet) or by the VHF system that send a order to local authorities to launch a specified signal. Signals can also be launched locally with both system if there is any reason for informing or alerting the public.
Sweden	At present there are two different systems for starting the outdoor warning system. The old one is by use of the public telephone system but is outdated and also expensive to operate. For instance, only large groups of sirens covering large areas can be activated by it and that is not always necessary. Most of the time there is no need to use more than a small group of sirens. This means that outdoor warning is very seldom used because you don't want to be warning people who aren't in danger.



Sweden	<p>A new system was developed for the operation, maintenance, and supervision of the sirens. It's an independent two-way network for radio communication between the rescue centre and the sirens. With this system it is possible to select and send different alert signals to predefined groups of sirens, or to a group which is decided upon for a certain accident, or even to a single siren. So the system is fully flexible. In the central unit of the system there is a PC with a map on which you can see the location and status of each siren. Installation of this system started in 1999 and to date has been installed to operate about 1,400 of the 4,800 sirens. Installation will be completed in 2003.</p> <p>The outdoor warning system can be started from municipal rescue centres or from the emergency services switchboard</p>
Switzerland	<p>There are about 4'000 stationary sirens installed. Currently about half of them are connected to a remote-control system. Mainly such systems are already installed in larger municipalities and towns. It is envisaged to have all the stationary sirens in a municipality or a region connected to a remote-control system.</p> <p>The sirens can either be operated separately each or by remote-control if connected to such a system.</p>
United Kingdom	No nationwide outdoor warning system in place



3) What authority of organization has authorization to start warning the citizens?

Country	Answers
Austria	<p>In Austria the warning can be started by the Co-ordination Committee of the Federal Crisis Management or in case of emergency by the Federal Alarm Center in cooperation with the government official of the radiation protection department.</p> <p>In Vienna the warning can be started by the head of the provincial government –the Major of Vienna- or one of his representatives or in case of emergency by the officer on duty of the Viennese professional fire-brigade.</p>
Bundesland Bayern	
Denmark	<p>The Police and DEMA (DEMA = Danish Emergency Management Agency)</p>
Finland	<p>During peacetime a local rescue authority or the emergency center will decide when to start warning the public based on the necessity of the act. During wartime the start-up is made from the wartime command and control rooms or from the emergency centers.</p> <p>The industrial plants using hazardous material have warning systems of their own. In a case of an emergency the plant makes its own decisions on starting the warning, so do the nuclear power stations.</p> <p>In a nuclear accident the actions are based on a delegate co-operation. Depending on the extent of the accident the actions are started by a local rescue authority, government authority or a rescue authority of the ministry of the interior.</p>
Italy	<p>Depending on event entity, the DPC national or local government authority have authorization to start warning the citizens (DPC = Dipartimento Protezione Civile / Civil protection department)</p>
Luxembourg	<p>Only the emergency call center 1 1 2 from the Civil Protection Authority (Ministry of the Interior)</p>
Netherlands	<p>The activation of the sirens will take place in a decentralized way according to the geography of the regions of the Fire Services Organisation. Each region has its own command and control centre, from which the sirens can be started up.</p> <p>The authority to decide if and when the outdoor siren systems will be used, is based on a concept of delegation.</p> <p>The final decision who will activate the system depends on the seriousness of situation.</p>
Norway	<p>In Norway it is the military chief of joint forces and the prime minister who can order a signal for warning the whole country. Locally it is the Chief Constable who can decide and order a signal to the public for warning or information.</p>
Sweden	<p>The outdoor warning system can be started from municipal rescue centres</p>



Sweden	<p>or from the emergency services switchboard.</p> <p>The following individuals and authorities are authorised to send warning messages via radio and television (see answer on 1).</p> <p>Chief Fire Officer (of a municipal rescue service) County Chief Constable Rescue commander at a rescue operation Duty officer (with a municipal rescue service brigade) Deputy Chief Constable on duty The County administrative board The Director of the Regional Civilian Defence Area The Coastguard The Swedish Board of Civil Aviation The National Police Board The Swedish Rescue Services Agency The National Administration of Shipping and Navigation Industries that have permission from their municipality to start the warning system.</p>
Switzerland	<p>In general the municipalities are responsible for the security of their inhabitants. In case of a local emergency that requires to alarm the affected public, the siren alarm can be released either by the local emergency services (e.g. fire brigade) or the corresponding authority (municipal council).</p> <p>In case of large-scale emergencies (e.g. nuclear accident) it is the national emergency operation centre (NEOC), which is a federal agency, that judges the situation and decides upon a warning of the local authorities and/or an alarm of the public by sirens</p>
United Kingdom	<p>If the incident is spontaneous, the response agency that is first on the scene would initiate warning procedures. If it is at a known hazard site, the operator is involved in the decision to warn. In the event of hostile attack UK the Home Office would initiate the warning.</p>



4. What types of sound signals are used in the outdoor warning system and for what purposes? Describe the signals as a function of time (verbal or illustrated).

Relation with Council Directive 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work (ninth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC) Official Journal L 245, 26/08/1992 p.0023 – 0042) and with ISO standard 8201:1987. Acoustic-audible emergency evacuation signal.

Summary to question 4

As a summary there is a conclusion, that in countries where there is a national outdoors warning system the signals used differ a lot. In Europe there are at least X different signals for different purposes. However, the information to the citizens is nearly always the same: Go inside, protect yourself, close doors, windows and air-conditioning, listen to the radio or TV for more information. In addition to this there are specific signal in some countries for alarming rescue or military organization.

As a conclusion the possibilities to standardize the form and usage of voice signals in Europe should be studied. On the other hand, a study should be made on how the citizens know and recognize the signals and how the information should be improved.

Voice signals are described in appendix A.

4a) Is there any plans to interconnect outdoor warning system with indoor alarm systems and do you have any national positions on this?

Country	Answers
Austria	There are some ideas to interconnect outdoor and indoor warning systems in Austria. But still there is no plan. There is just the looking for a appropriate indoor warning system.
Bundesland Bayern	
Denmark	Not at the present time
Finland	No working systems nor clear plans. Emergency centers have instructions to take care of alarming the underground spaces in their area.
Italy	-
Luxembourg	Not in use and no plans for the future
Netherlands	-
Norway	There is no official plan to connect outdoor warning with indoor alarm systems. We will recommend such connection to the government if we get a new warning system in Norway.



Sweden	In the inner emergency planning zones around the nuclear power plants both indoor and outdoor warning systems are used at the same time in case of an accident. Warning and information messages on radio and television are always sent at the same time.
Switzerland	At present there is no interconnection between the outdoor alarm system and an indoor alarm system planned. Indoor alarm lies in the responsibility of the owner of the corresponding building (e.g. a company or enterprise).
United Kingdom	No nationwide outdoor warning system in place. There are some local systems used in areas liable to flooding and their use as part of a spectrum of warning arrangements is kept under review.

5) *Is the outdoor warning system used for anything else but warning the citizens, e.g. alarming the volunteer fire-brigade? For what else can it be used?*

Country	Answers
Austria	The outdoor warning system is also used for alarming volunteer fire brigades (s. pt. 4.5: fire brigade signal).
Bundesland Bayern	
Denmark	No, and no plans for other use.
Finland	Until December 31, 2001 the "all clear" –signal can be used to alarm rescue forces. By that date there is a plan to develop modern alarming systems for rescue operations in which the outdoor alarms are only for warning people in war-time. In Finland the order of warning the public by voice signals was renewed last year because there was a contradiction between peace time and war time signals. Same signal was used in different meaning in peace and war time.
Italy	-
Luxembourg	One of the signals is reserved for alarming the volunteer fire brigades.
Netherlands	No.
Norway	The system are primarily not used for anything else than warning the citizens in peace time, but the signal «important announcement - listen to the radio» can be used for mobilising the military forces.
Sweden	The outdoor warning system is used only for warning the general public and for the "Emergency Alarm" (See kohta 4).
Switzerland	The siren system may also be used in some municipalities to alert the fire brigade. In such a case a different signal is used (Cis-Gis sound).
United Kingdom	In those areas liable to flooding which have an outdoor system, the system usually consists of electromechanical sirens which cannot convey



	information and only sound a signal which means that a flood is imminent.
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6. How do you actually use or plan to use other modern media in warning the citizens (RDS-system, digital-TV, internet, etc.)?

Country	Answers
Austria	There is a pilot project in Vienna to use internet (news letter).
Bundesland Bayern	
Denmark	Radio Denmark uses RDS –messages for that purposes
Finland	A nationwide RDS systems is in use. Using the internet has not been planned yet. There has been discussions on using mobile phones to warn the public, but there are no clear plans.
Italy	Actually are used TV, radio and press to give release and to show interviews both to the experted and to the public personnel that are employed in the management of the event. Search institutes or national survey used internet to show informative reports on the event. For the first seismic national emergency plan for the aspect information to the population is being taken contacts with all the local and national media(press and TV) to realize an official canals of communication managed directly from the responsible of the emergency
Luxembourg	- Connection to the national radio stations (in use) - Connection to the single national TV station (in use) - Connection to the providers of cable TV systems (planned) Access to the Web-side of the "Service Information et Presse" (planned)
Netherlands	The siren system is to be used together wiht local or national TV
Norway	In this matter we are in a early stage. We are thinking about warning over Cellular phones, TV , RDS and other new modern technology.
Sweden	The RDS system is used as described above. An investigation will start this year to see if the Internet can be used for sending warning messages to the public. Discussions are currently ongoing on how to use the DAB system, but to date there are no plans for its use
Switzerland	In the concept-study concerning "Warning and Alarm 2000" electronic media had been evaluated too. The result was that such media (Internet, RDS, etc.) could be better used for information purposes than for an alarm message.



United Kingdom	The new Technology Group of the National Steering Committee is reviewing systems and will make recommendations.
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7) Do you have the type of industry that uses or produces hazardous material? If yes, does the industry have an obligation to maintain a warning system (external or internal) in case of an accident?

Country	Answers
Austria	Yes. There are also obligations to maintain warning systems.
Bundesland Bayern	
Denmark	DEMA is responsible to maintain the warning system. (DEMA = Danish Emergency Management Agency)
Finland	Yes. There are also obligations to maintain warning systems of they own.
Italy	<p>In Italy there are above 350 industry that uses or produces hazardous materials. The industry must transmit a notification and a safety plan to the environment ministry, sanity ministry and to the regional authority. The safety plan contains the internal emergency plan. The prefecture must draw up the external emergency plan. In the internal emergency plan must be hypothesized all the possible events and the relative scenarios of damage. In the internal emergency plan must be compile informative report dedicated to the citizen and to the workers about the risks of remarkable accident .</p> <p>Furthermore in the internal emergency plan there is a description of the industry activities, a description of the substances, a description of the nature of the risks of remarkable accidents and of the type of effects (analysis of the scenarios and of the consequences) for the population and for the environment, the prevention and the safety measures that are in use, the warning and alarm system and the behavior rules.</p>
Luxembourg	No such type of industry that uses or produces hazardous material as described in Seveso directive.
Netherlands	This type of industry has an obligation to maintain a internal warning system.
Norway	<p>There are 3 special areas in Norway where hazardous materials are produced by the industry . In these areas there are established a special warning signal proclaiming «Gas». In these areas industry and local government are co-operating in alarming the citizens.</p> <p>The industry have an obligation to maintain a warning system within the plant while the local governments maintain the system outside the plant.</p>
Sweden	Yes. There are also obligations to maintain warning systems.



Switzerland	<p>Since 1991 there is a particular "Ordinance on Protection against Major Accidents" in force. This regulation binds the companies and enterprises, which produce or manufacture hazardous material to establish the necessary safety standards in order to prevent major accidents. If such an accident occurs, the enterprise is obliged to inform the corresponding cantonal agency or authority.</p> <p>This agency or authority would then order an alarm of the public if necessary.</p>
United Kingdom	<p>Yes. The industries have the responsibility to provide information and advice to the public in the local area and to review these provisions every three years. In the event of an incident, the companies must have in place a system for providing information and safety advice. However, the nature of the system is not specified and is left to local discretion.</p>

8. Describe briefly and in general who is responsible in your country to maintain and develop the system? Do you consult fire brigades when developing your systems?

Country	Answers
Austria	Provincial governments are responsible for maintenance and development of the system. There is a close cooperation with the volunteer fire brigades.
Bundesland Bayern	
Denmark	The Police has their own classified instructio, and DEMA has theirs.
Finland	Ministry of the interior, rescue department gives out general orders of voice signals and technical implementation of the warning system. Local communities take care of the local implementation and function. Control systems are carried out in co-operation with emergency centers and local authorities.
Italy	There is not a national system. There are the Local Gov. authority and the Fire Dept.
Luxembourg	The Civil Protection Authority from the Ministry of the Interior is responsible for the outdoor warning system. The fire brigades are subordinated to the Ministry of the Interior
Netherland	Ministry of the Interior in corporation with the regional Fire Department.



Norway	In Norway, there is the Civil defence organisation who is responsible for maintaining the warning system. The Directorate for Civil Defence and Emergency Planning is responsible for developing the system and there is no co-operation or consultation with the fire brigades.
Sweden	The Swedish Rescue Services Agency owns the outdoor warning system and is responsible for its development. The municipalities are responsible for maintaining the system and in general it is the municipal fire & rescue brigades that do this job and we consult with them when developing the system.
Switzerland	In the federal law on Civil Protection it is stipulated that the municipalities have to install and maintain an appropriate alarm system for the public. Generally the technical specifications of such a system are open but a system, which is offered by a company has to be certified by the Federal Office for Civil Protection. Currently there is no direct co-operation with fire brigades, because they are based on cantonal legislation. In future (from 2003 onwards) the federation will be responsible for the entire warning and alarm system for the public. This means that a further development will be co-ordinated with all involved organisations.
United Kingdom	Where radio and TV broadcasts are used, the broadcasting companies maintain the system and liaise with local response organisations on how the system would be used. When local warning arrangements are planned / reviewed, all local emergency response organisations should be involved in the discussions.

9) Do you have national orders, instructions or recommendations concerning warning and alarming the public? If yes, what are they called and when were they given?

Country	Answers
Austria	There is a treaty from 1987 between the federal government and the nine provincial governments of Austria dealing with development, maintenance, use and the financial plan.
Bundesland Bayern	
Denmark	Alert messages broadcasted by Radio Denmark is described.
Finland	See answer 8. The order for the voice signals to warn the public, given out November 26, 1999.
Italy	For Chemical disaster the law 177 obliges the company to compile informative report for the citizen.



Luxembourg	Instructions concerning warning and alarming of the public are given in the national warn and alarm plan in case of a accident in the nuclear power station in Cattenom (French border).
Netherlands	We maintain a national information cycle by radio and TV at least once a year.
Norway	Yes, we have an instruction concerning the use of signal «important announcement - listen to the radio».
Sweden	We have national regulations for the outdoor warning system. It was issued in October 1996. There is also an agreement between the Swedish Rescue Services Agency, the Swedish Broadcasting Company and the Swedish Television Company concerning warning and information given via radio and television. This agreement was signed in May 1998.
Switzerland	Currently there are numerous prescriptions in different regulations. It is planned to integrate these different prescriptions in one "Alarm Ordinance" (planned for 2003).
United Kingdom	There are regulations covering warning arrangements for areas surrounding known hazard sites.

10) What kind of instructions are given to the citizens in case of an emergency, and how are they given?

Country	Answers
Austria	See appendix B.
Bundesland Bayern	
Denmark	The sound of the sirens means for the citizens: Go inside, close your windows and doors and switch on your local TV and/or radio.
Finland	The instructions are given to the citizens in phone books and locally published security guides.
Italy	Some comportamental standards are communicated to the population through radio, television and newspapers. During an emergency in the crises rooms different experts are dedicated to provide the right information to the media. Special brochures are periodically issued and are distributed to the citizens to show the instructions must be followed in case of an emergency. Also some seminar are conducted by experts in the schools and in the University institute.



Luxembourg	The purpose of the outdoor warning system is to alert the population and to tuned in a national radio station where is given a notification to the public
Netherlands	The sound of the sirens means for the citizens: Go inside, close your windows and doors and switch on your local TV and/or radio.
Norway	Instructions to the citizens can be to stay calm, close windows, and stay inside. In most cases the authority will use radio and text TV to give instructions. During the last ten years the signal «important announcement - listen to the radio» has been used three times. Last time it happened in a train accident at Lillestrøm in April this year. It was necessary to evacuate a number of people because a train wagon loaded with LPG was burning and the risk of an explosion was imminent.
Sweden	In the public telephone directory there is information about the warning signals and how to act when the signals are used. This information can also be issued in several other ways for example it can be found in municipal rescue service plans. See also question 1, warnings on radio and television.
Switzerland	Appropriate general instructions for different cases are published in the telephone directories. Particular instructions would be broadcasted according to the actual needs. In case of an emergency the siren sound "General Alarm" calls the people to listen to the radio where they will get appropriate instructions.
United Kingdom	Local arrangements apply but will be directed at giving advice and information.

10a) How often do you check the functioning of the systems? Do you have specific days or times for the checking procedure? How often do you organize exercises involving the population?

Country	Answers
Austria	First Saturday in October every year all over Austria. There are some additional checks in the provinces. Number and time are differing from province to province.
Bundesland Bayern	
Denmark	--
Finland	Instructions given in the 1980's recommend testing every Monday at noon, but locally the practice varies. In every case, testing is regular.
Italy	Every year are planned more national exercises involving the mixed task force specifically trained for a particular emergency; furthermore local emergency procedures are simulated with the population.
Luxembourg	Every first Monday of the month at 12:00. We don't organize exercises where



	the population is involved.
Netherlands	System test at least once a month (silent alarm) and organize a exercise involving the population at least once a year.
Norway	Locally the civil defence organisation has to do the maintenance of its sirens. During this work they have to do different kind of tests in the control system. In Norway we have a country wide sound check of the whole system two times a year. One in the middle of June. The other in the middle of January. In January the signal «important announcement - listen to the radio» are sent and in June the signal «air attack» and the signal «all clear» are sent at intervals of five minutes.
Sweden	The outdoor and indoor warning systems presented in the answer to question 1 are tested on the first Monday in March, June, September and December. The outdoor system is tested at 15.00 and the indoor system at 19.00. At the same time information about the test is given on the radio. Exercises involving the population are very rare.
Switzerland	The sirens are yearly checked on first Wednesday in February at 13.30. It is a technical check. There are no exercises involving the public.
United Kingdom	Local arrangements apply.

11) How well functioning and covering is your present warning system (mean time between failures, percentage of population covered, etc.)?

Country	Answers
Austria	The systems covers approximately 60 – 80 % of the population. Failure rate at the system checks is around 2 %.
Bundesland Bayern	
Denmark	No information on fail frequency nor coverage. The present system is still quite new.
Finland	No information on fail frequency nor coverage. RDS system is nationwide, coverage 90%.
Italy	For the seismic risk, by half an hour from a Seismic event has been detected by the monitoring network, the national Seismic department can provide to the central Crisis Management Room a complete pictures about: epicentro, structures (hospital, military buildings, schools, hotels, Fire brigades) population, damage estimation, specific warning (chemical industry, dams....) .



Italy	The computer system is a cluster in order to guarantee a continuous functioning and permit the operators to update in real time the info coming from local office. In this way the sw procedures already implemented can elaborate the new info with those ones included in the RDBMS of National Seismic Dept. and delivery to the DPC Authority an always updating scenario.
Luxembourg	No data.
Netherland	There are no failures in the system upto now and nationwide cover is 95 % of the population.
Norway	Some years ago we had a theoretical coverage of 80 percent in built-up areas. In the countryside the coverage was about 2 and the overall coverage was estimated to ca. 60 percent. Five years ago we had to reduce the total number of sirens from 2000 to 1200. Consequently the coverage is now about 45 percentage.
Sweden	The outdoor warning system covers approximately 60 % of the population. The indoor warning system with RDS covers all people living inside the inner emergency planning zone around the nuclear power plants. Warning via radio obviously covers everyone who can listen to the radio. We don't have any statistics in relation to the effectiveness of the systems as regards reaching their target population.
Switzerland	There are 1-2 false alarms per year due to technical malfunctions. The yearly siren checks show an average availability of more than 95%. The current alarm organisation with 4'000 stationary and 3'000 mobile sirens covers more than 95% of the population.
United Kingdom	No nationwide outdoor warning system in place.

12) Have you planned or implemented any projects to develop the public warning system? If yes, how is it organized and what is the schedule?

Country	Answers
Austria	No
Bundesland Bayern	
Denmark	DEMA is following the technical development closely, but there is not yet any system that can compete with the present
Finland	In Finland there is a renewal of the authority radio network and emergency centers going on at the moment. Both these projects have affect on the warning system and bring some renovations especially to the control systems. Radio network will be built by year 2003 and emergency centers by year 2006.
Italy	Yes. For example SMS utilized mobile phone.



Luxembourg	In the next years we will replace the existent sirens by electronic models with pre-recorded messages.
Netherlands	No
Norway	There is no official plan yet
Sweden	A new control system for the outdoor warning system.
Switzerland	It is envisaged to connect all the stationary sirens (currently 4'160) to regional remote-control systems. At present there are about half of the sirens already connected to a remote-control systems. Further it is planned to connect all the regional systems to a national remote-control system.
United Kingdom	The presentation will be given at the workshop by mr Hay.

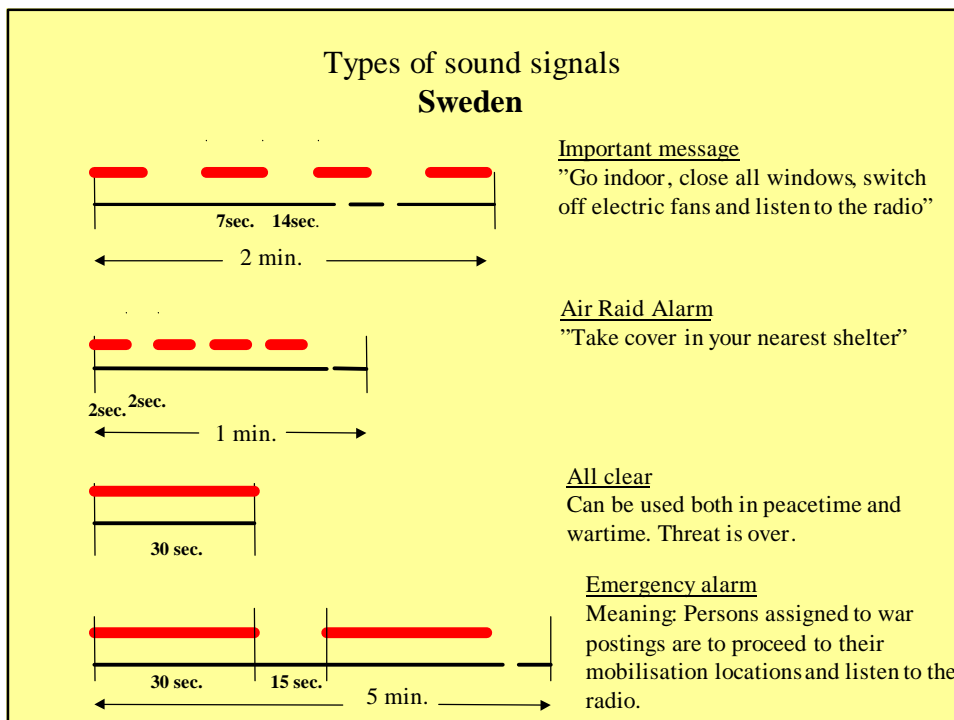
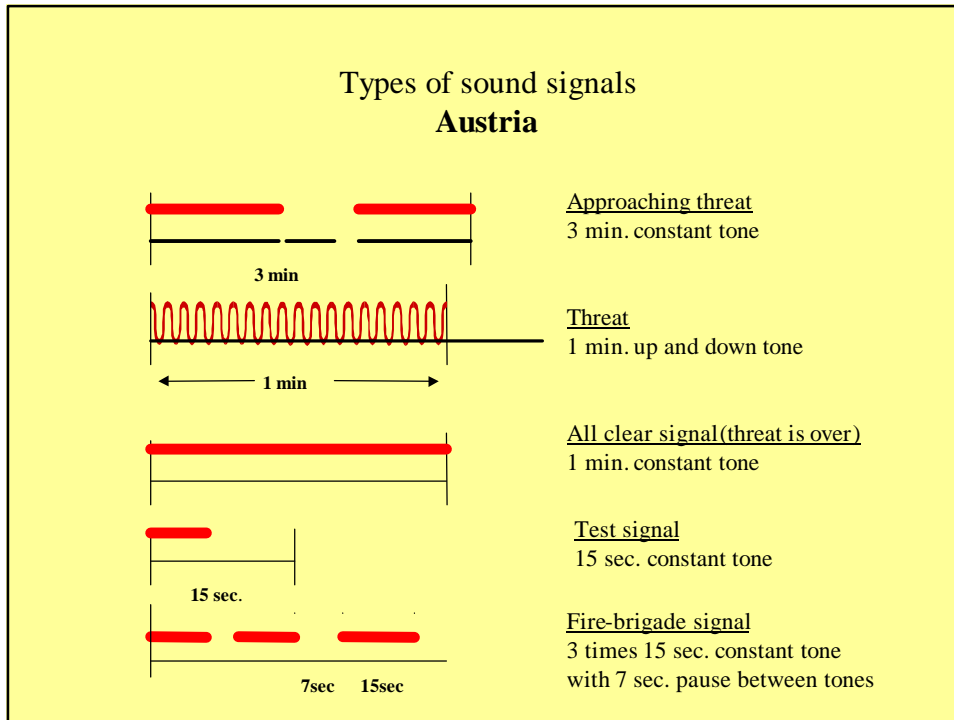
13) What kind of technical prospects do you have in warning the citizens?

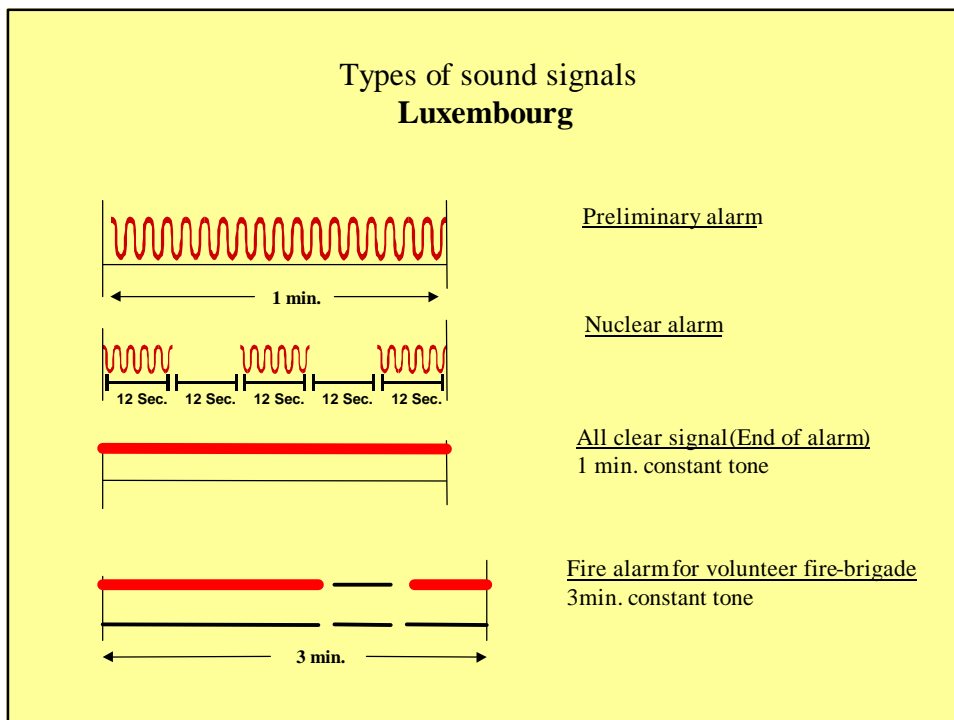
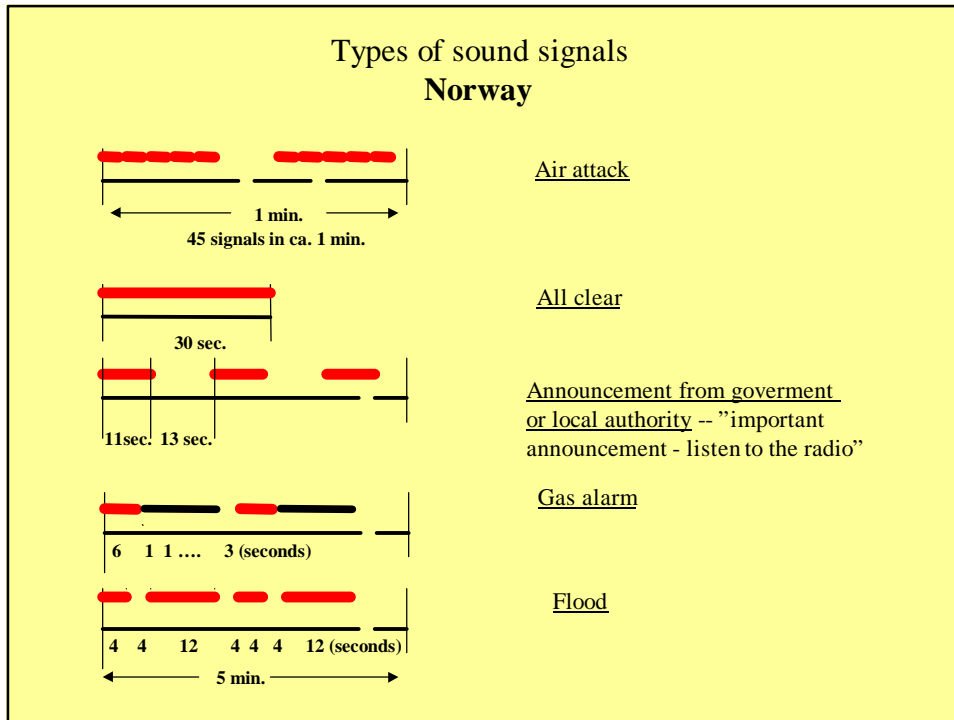
Country	Answers
Austria	To add a indoor warning system to the existing outdoor warning system.
Bundesland Bayern	
Denmark	--
Finland	Renovation of the control systems Using mobile phones to warn the citizens New possibilities by digital TV
Italy	A new web based systems will be implemented during next year in order to inform the citizens with different details level about: what's happening, how to do, which kind of instructions must be followed, etc. These info will be available via internet using PC, Television set top box, cellular phone (UMTS).
Luxembourg	- Sirens with pre-recorded messages - Access to the web-side of the "Service Information et Presse" Connection to the providers of cable TV systems
Netherland	--
Norway	We are thinking about warning over Cellular phones, TV , RDS and other new modern technology.
Sweden	No specific prospects beside the investigations mentioned in question 6.
Switzerland	New techniques are constantly considered. For the time being a siren-based alarm system is looked at as very useful and cost effective. An improvement could e.g. be the radio-controlled release of the sirens.
United Kingdom	Presentation will be given at the workshop



14) How do you take into account the needs of special vulnerable groups (elderly people, people with hearing or sight disabilities, tourist, etc) ?

Country	Answers
Austria	We hope to solve these problems with a well working indoor warning system.
Bundesland Bayern	
Denmark	It is responsibility of the municipalities to take vulnerable groups in consideration.
Finland	No particular plans.
Italy	At local level has been planned to inform vulnerable population through special and multilingual messages and warning.
Luxembourg	--
Netherlands	For elderly people we maintain local warning and alert system (red button); for people with hearing disabilities we developed a new system which we plan to implement this year.
Norway	Locally the authorities have to record special vulnerable groups. If there is a situation in which help is needed the authorities will take care of them.
Sweden	There are discussions between several authorities on the responsibility of warning these groups of people but there are no conclusions. Some investigations have been made and some technical equipment is currently being tested for the warning of people with hearing disabilities.
Switzerland	At present it is examined how the deaf or hard of hearing people could be alarmed (e.g. by an optical system). Another project to be studied is the use of the radio system of the public transport in towns in order to give information to the public.
United Kingdom	This subject is under review.





Types of sound signals Switzerland

General alarm
"Stay inside, listen to the radio and follow the instructions"

Nuclear Alarm
"Go to the basement or shelter, listen to the radio and follow the instructions"

Flood
(water alarm)
"Evacuate immediately the endangered area and follow the official instructions"

Types of sound signals Denmark

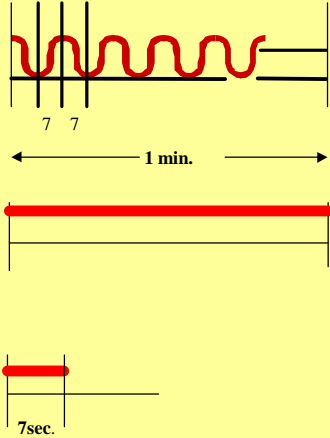
General alarm
In the event of everyday accidents and disasters." Seek protection indoors immediately. Close windows and doors listen to the radio/TV for further info.."

All clear
"You may live your shelter"

General warning signal in wartime. "Immediately seek the best possible protection indoors, in basements or shelters. Listen to the radio/TV for further information"

General alarm in wartime
As orders above + make seal up the protection tight by using of plastic or tape.

Types of sound signals
Finland



General warning signal
"Go inside, close doors, windows and ventilation. Listen to the radio/TV for further information"

All clear signal
1 min. constant tone

Sirens test signal

Types of sound signals

- **Netherlands**
 - only one signal in use, it's given during 15 minutes and means:
 - Go inside immediately
 - Close doors and windows
 - Turn on the radio or TV
 - sirens would be tested without any tonesignal
- **United Kingdom**
 - No nationwide outdoor warning system in place
- **Italy**
 - No nationwide outdoor warning system in place

WARNING AND ALERTING SIGNALS IN AN EMERGENCY

1. WARNING



Continuous steady tone for 3 minutes - APPROACHING DANGER
Turn on Austrian radio or TV, observe protective measures

2. ALARM



Ascending and descending whine for 1 minute - IMMINENT DANGER
Go to sheltered places, follow instructions on radio and TV

3. ALL-CLEAR



Continuous steady tone for 1 minute - END OF DANGER
Observe instructions announced on Austrian radio and TV

