



# EURISK Map - Report

Project carried out with the support of the European Community within the Framework of the Community Action Programme in the field of Civil Protection

This document does not necessarily represent the Commission's official position



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## Summary

This report describes the results of the EURISK Map project. EURISK Map stands for EURegional Interactive Risk Knowledge Map. As the project name suggests, a *Geographical Information System* has been developed for presenting the knowledge about risk objects. Here risk objects are objects that form a risk of causing a disaster and objects that can be at risk in case of a disaster.

There are three reasons for developing this application.

- First, we want to create awareness in the EUREGIO that risk assessment is the starting point of emergency planning. By identifying the hazards in the region, describing the vulnerability and knowing the available means of response to mitigate the consequences of a major accident, one can speed up the vigilance of all agencies and authorities involved.
- Second, large natural and man-made disasters require a good co-operation between all public safety organisations. In the case of a major accident, cross-border co-operation by the emergency response organisations is of crucial importance for the safety of the affected public and/or environment. This co-operation essentially depends on having reliable information about hazards in the region, about vulnerabilities and about means to respond. Having this information available in a written format can be problematic in a multi language region. One has to maintain the information in several languages. This requires centralised procedure to ensure that all parties possess up to date information. This introduces large maintenance problems. The desired application should overcome at least some of these problems.
- Third, to assure a wide acceptance of that new tool it should be freeware for all interested agencies.

Since a picture says a thousand words in any language, the EUREGIO Maas-Rhine has developed the geographical information system EURISK Map. EURISK Map is a stand alone program that can show objects representing a risk or vulnerability on a map of the region. Furthermore, associated with these objects is a database that provides specific information and that can be accessed through the object on the map.

Due to the reduction in the available time for the development of the system from the planned 2 years to 9 months it was clear that the prototype version would have to be finalised after the first phase supported by the Community Action Programme.

Finally, in an extension of the current system, each region in the EUREGIO Maas- Rhine will be able to maintain its region on the map, thereby avoiding a centralised organisation.

## 1. Content

1. Content	2
2. Problem description	3
3. Design choices	4
4. System description	7
5. Procedures for maintaining the database of risk objects	8
6. Finalisation of the project	9
7. Future work	10
8. The EURISK Map workshop	11
Appendix – Workshop program	15
Appendix – Workshop participants	18
Appendix – Installation manual	22
Appendix – System usage	24
Appendix – Map Symbols	26



## 2. Problem description

The goal of the EURISK Map project is to develop a prototype of a system that can show risk object on a map and that can provide information about the shown objects. The prototype will be a stand-alone program while the final system should run on a computer network. The prototype to be developed should meet the following requirements.

- Show on a map of a region the objects that form a hazard and the objects that are vulnerable.
- Provide the possibility to choose the type of objects that will be shown on the map.
- Information about objects must be stored in a database.
- Show the information about an object when the representation of the object on the map is selected
- The information stored in the database must be maintained locally in a final system.
- The program should allow that locally maintained information can be accessed over a network such as the Internet.
- The product must be made available as freeware for all EUREGIOs in the European Union.



### 3. Design choices

During the development of the EURISK Map prototype several design choices have been made. The most important choices will be presented below together with their advantages and disadvantages, and with the motivation for making a particular choice.

#### **No third party GIS**

The most important choice that has been made is to develop a system from scratch instead of developing it using a Geographical Information System (GIS) from a third party. Using a third party GIS has the advantage that most of the required functionality is already provided for by the system. One only has to tune the system for the problem at hand. Such a GIS must meet three requirements to be suited for our purpose.

- The GIS must be cheap, not only for a single user environment but also for an environment in which an installation of the system in every municipality and every fire department in the EUREGIO is realised.
- The second requirement is that it must be possible to link the system to a database in which the *risk data* is stored.
- Finally, it must be impossible for a user to corrupt the data when viewing it.

A high quality GIS is expensive and requires a high license fee for every installation. Therefore choosing such a system was not in range of the project. A less expensive GIS, however, makes no separation between changing data and viewing the data stored in the GIS. As a consequence, a user can accidentally change the location of a *risk object* on the map, while accessing the information about the object. This results in a corruption of the data. Since it must be possible to use the system in stressful situation a less expensive GIS was no option for the project.

We have chosen to store all the GIS data in a database and to develop a separate program to view the data.

- The main advantage is that the resulting EURISK Map prototype is **freeware**, it can be installed on as many computers as we would like. Moreover, other EUREGIOs can also use the prototype.
- We can assure that a user cannot corrupt the data while using the system.
- An important disadvantage however is that, unlike the more expensive GISs, we do not have the ability to read standard file formats for GIS data. Writing programs to provide for this functionality will be a future option.
- Another disadvantage is that, unlike the more expensive GISs, we cannot handle several co-ordinate systems. All co-ordinates must be specified in decimal WGS'84. *We can, however, show every position on the map in WGS'84 co-ordinates, independent of the co-ordinate system of the maps itself.*



### ***A centralised database***

One of the goals of the project is to enable decentralised maintenance of information stored in the database. That means that every region in the EUREGIO will be responsible for maintaining the data of their region. Initially the final version of the system, not the EURISK Map prototype, should access the locally maintained information when necessary. We have decided to drop this goal for the following reasons.

- Accessing data over a network can be slow.
- During a mayor accident network connections can become unavailable.

We have chosen for a system that has all data locally available. The developed system has, however, a function to download a new version of the database from an FTP-server over a network. In this way the user can assure that s/he has up to date data. Of course, this choice raises the problem of maintaining the data on a centralised FTP-server. Besides appointing someone responsible for maintaining the data a possible solution would be to write a program that allows a region to modify the data of their region stored in the database on the FTP-server.

### ***The Microsoft Access database***

Assuming that everyone will have *Microsoft Office 97*, we have chosen to use Microsoft Access for the database. Microsoft Access is not the best possible choice because it is relatively slow; moreover, a program cannot access Microsoft Access direct. Microsoft Access must be accessed using the *Open Data Base Connectivity* (ODBC) interface. This ODBC interface, which is a part of Microsoft Office 97, provides a uniform access to databases such as Microsoft Access.

The programming language, in which the EURISK Map prototype has been developed, offers a better database. We could use this database in the future, but then we would also have to develop programs to update the database. We do not have to write programs for updating the database when using Microsoft Access.

### ***The Maps***

In principal there are two types of Geographical Information Systems, one that uses vector maps and one that uses raster maps. Since we have chosen not to buy a GIS, we cannot use vector maps. Vector maps are specified in special formats that we should be able to read. Moreover, developing a fast and high quality system for presenting vector maps requires more work effort than was possible within the project. Finally, vectors maps are rather expensive.

The alternative for vector maps is raster maps. Basically a raster map is an abstract picture of an area. Raster maps have the disadvantage that all information is encoded in the picture. A road is a set of pixels having a special collar. It is not an object that can manipulated. As a result roads that are main transport routes cannot be highlighted but one can only draw markers along these roads.<sup>1</sup>

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<sup>1</sup> One could draw a line on top of a road. However, it is almost impossible to guarantee that the line is exactly on top of the road when using different maps, as we do.



Raster maps come in different shapes and sizes. The best ones are those of the national cartographic institutes. Unfortunately, these maps, although cheaper than vector maps, are very expensive. A single user license for the maps of one province is already too expensive given the project budget. Licenses of for all municipalities and all fire department of the EUREGIO would cost millions of EUROS a year. Clearly, this is not an acceptable option. Therefore, for the Dutch and Belgian part of the EUREGIO, we have chosen to buy maps from a company that makes these maps using air photography. According to cartographic experts, these maps are too colourful for our purpose but they have, however, a good quality and they are not expensive.

For the German part of the EUREGIO, we have obtained a 20 users license form the Landesvermessungsamt Nordrhein-Westfalen for using four topographical maps of the German side of the EUREGIO. Though the quality of the maps is very good, it is our impression that these topographical maps are less suited for computer screen.



#### 4. System description

The EURISK Map prototype consists of four parts, namely,

- a database,
- a folder with maps,
- a folder with icons and
- the EURISKmap program.

The database is used to store almost all data used by the EURISKmap program. The only data that is not stored in the database concerns the maps used by the program and the icons used to represent objects. The reason for this is that Microsoft Access is not able to store graphical data such as maps and icons. Therefore, the maps and the icons are stored in separate folders.

The fact that maps are not stored in the database can be seen as an advantage. The maps will not change often, therefore there is no need to update them regularly. Moreover, the map data is large and would require a long time to download.

Also the icons should not change often. The icons that are used in the current system however, are open for improvement. Also when new categories are introduced, it is possible to add an icon representing an object of the new category on the map.

The EURISKmap program is used to show the maps of the region together with risk objects on their proper location. Furthermore, the program offers access to the data of a risk object that is stored in the database through selection of the risk object on the map. The following data is presented when a risk object is selected:

- The name of the object.
- The address of the objects.
- The category of the object.
- The location(s) of the object (in WGS'84).
- Whether the object is a risk class.
- Whether the object is a Seveso II object.
- Whether the object has an emergency plan.
- Whether the object has a fire brigade deployment plan.
- Whether the object has a fire brigade plan.
- A description of the object.
- The dangerous materials stored at an object, together with the amounts.
- The person to contact in case of an emergency.



## 5. Procedures for maintaining the database of risk objects

The success of the EURISK Map system strongly depends on maintaining the database. For reasons described above, we have chosen to update the database from a central FTP-server. The EURISK Map prototype has a build in function for this task. A small improvement of this function could be the addition of a warning that the user did not update the database for a long time.

A more important issue is the maintenance of the database on the FTP-server. At the moment there are two ways to do this. In both scenarios someone must be responsible for maintaining the database. In the first scenario new data and modification are send to the person responsible for maintaining the database. S/he uses the information to update the database.

In the second scenario replicas are made of the database. Microsoft Access contains a special function for this purpose. These replicas are handed over to the responsible persons for maintaining the data of certain regions. After making a modification the replica is sent to the person maintaining the database on the FTP-server. S/he can update the database on the server using the replicas<sup>2</sup>.

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<sup>2</sup> Using replicas has one disadvantage. There is no control on who is changing which data. If someone changes data outside his/her responsibility, conflict can arise.



## 6. Finalisation of the project

Finalising the EURISK Map prototype the following tasks have to be carried out.

- Maintenance and extension of the database. This will require the gathering of more detailed information about objects representing a risk in the EUREGIO.
- Implementation of a procedure for providing all users of the EURISK Map prototype with the latest version of the database.
- Repair of bugs that may be found in the program.
- Evaluation of the benefit of using the EURISK Map prototype on risk assessment, and on information exchange in case of a mayor accident, in the EUREGIO.



## 7. Future work

The EUREGIO wishes to continue the development of the EURISK Map prototype into a final system that can be used by all EUREGIOs within the EU **for free**. If sufficient funding can be found, the following issues should be dealt with in the development of the final system.

- In the prototype, a separate set of maps for each region is used. In a set of maps, the maps that have the same resolution make up one larger map. If an area of interest overlaps two neighbouring maps, only one of the two maps can be shown. As a result one cannot see the larger map that can be build from the two maps, each representing a part of the area. To show one larger map that can be build from the two maps representing the area, the current program must be extended and the database must be changed.<sup>3</sup>
- In the prototype version one and the same co-ordinate system is used for to denote the positions of an objects, independent of the co-ordinate system of the map. These positions are approximated. The errors caused by the approximation can usually be neglected.
- The final system must posses the ability to read different file formats.
- The final system should integrate the map selection and the zooming function. By zooming-in with fixed steps, we can select a map with a higher resolution if appropriate.
- In order to improve the presentation of information, it must be possible to specify for each zooming level or map level, the objects that are shown. At the top level we could, for instance, show only the fracture lines, the inundation areas and the Seveso plants.
- The final system must contain a program for updating the database on the FTP-server. Such a program would make it possible to maintain the information of specific parts of the EUREGIO locally.

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<sup>3</sup> Note that we cannot combine the sets of maps of the different region because the maps are based on different coordinate systems



## 8. The EURISK Map workshop

One part of the project was a where the method of working, the shortcomings and the results of the project should be discussed with representatives from other Memberstates.

The workshop was divided in to two parts:

- The first part consisted of lectures concerning risk assessment, the use of maps and of dynamic GISs, the EURISK Map prototype, cross-border co-operation and the so-called EMMI project.
- The second part consisted of discussions in smaller groups about risk assessment.

### **Part 1: Presentations**

#### **“The APELL programme - Risk assessment in a local community”**

**Dr. Goldschmitt** of the United Nations discussed the importance of assessing risk for the purpose of damage control, the development of emergency plans, the training of people and public education. His presentation perfectly showed that the process of risk assessment is a “state-of-the art”-procedure for prevention work rather than a theoretical approach without any practical significance.

#### **“The map as an instrument for the assessment of risks”**

**Professor Kraak** discussed the usage of maps. Shortcomings and advantages of maps are highly dependent on the intended use. Therefore he drove the attention of the audience to the importance of choosing a good representation. But he also create awareness that even a correct representation can be biased because of the way one looks at a map.

#### **“ Dynamic GIS for the assessment of regional development”**

**Mr. Groothuysen** of RIKS B.V. discussed how a dynamic GIS could be used to predict future developments of a region. It can, for instance, be used to predict the development of industrial areas and residential areas. These developments give insights in changes in risks and vulnerabilities.

#### **“Collection of Risk data”**

**Mr. Tiemessen** of AVIV B.V. described the work which has been undertaken for the province of Limburg, the Netherlands. He discussed the collection of risk data and the calculation of risk contours around industries.



### **“ Tools for Euregional cross-border communication”**

**Dr. Nuessler** of the fire department of Aachen discussed the information exchange between the fire departments in the EUREGIO. It was highlighted that due to the fact that even a term that is the same in two languages, can have slightly different meanings, a dictionary with terms in four different language has been developed. Further standard faxes in three languages informing each other and for requesting assistance, have been developed.

### **“EMMI – Communication tool for the Euregional Police”**

**Mr. de Heus** of the Police South Limburg of the Netherlands presented the EMMI project. The EMMI project is concerned with electronic information exchange between the police forces in the EUREGIO. The information exchange takes place through electronic standard forms to which one can attach photos, fingerprints, and so forth. The technical solution of this project could form a basis for the further development of the current risk mapping initiative.

### **“Experience with risk-mapping”**

1.

**Mr. Schaefer** described the experience made in the German part of the EUREGIO during the project with data collecting data on local, regional and “Land” – level. He draw the conclusion that the project was easy to handle on the medium level but need more attention on the local level because of the shortcomings with respect to awareness for the need of risk assessment and resources (manpower and money) for data collection and updating.

2.

**Mr. Herzig** highlighted the experience made in Limburg (NI) with the realisation of the already highly developed computerised risk-maps. The initiative was mainly financed by the government of the province and therefore has created a considerable amount of useful data. Some areas still have to put more effort in data collection.

## **Part 2 : Discussion groups**

The participants discussed the issues highlighted on the first day in three different working groups with chairmen from the EUREGIO Maas-Rhine working group “Public Safety”:

Group 1 chaired by N.M.J. Herzig, Province of Limburg (NL) comprised delegates from :

- Sweden
- Finland,
- Norway,
- Germany
- The Netherlands

Group 2 chaired by P. Vandebussche, Province de Liège (B) comprised delegates from

- Austria,
- Germany,
- Luxembourg,
- France,
- Belgium

Group 3 chaired by L. van Rompaey, Province Hasselt (B) comprised delegates from

- Greece,
  - Germany;
  - Spain,
  - Ireland,
  - United Kingdom
- 

To ease the comparison of the discussed issues a list of questions to the participants was prepared. Each discussion group had their own focus on particular issues. Therefore not all questions were tackled the same way.

In general one has to say that the participants described their regional situation rather than the national one. But that has no impact of the desired result of this discussions which was to create awareness and motivation to implement the lessons learned during the workshop in their home area of competence.

The summary hereafter gives a brief description of the main results of the discussion:

## ***Application of Risk Assessment and Risk Mapping and/or GIS systems for emergency planning***

Most of the participating delegates reported that risk assessment is used – to what extent varies very much not only on national level but also on local and regional level. In the past years in the UK risk assessment became very important as the whole fire service is undergoing a restructuring.

In Sweden a certain method is applied for risk management. First an area is defined, then a risk inventory is made for this area. The final goal of this approach is to build a GIS-system on a national level. A group of technical planners and a reference group guide the project. Sweden started some pilot projects in several communities. In Finland and Norway they have a similar approach.

In Germany however the upper administrative levels only judge the plans that communities have to make on their own. The upper administrative levels do not facilitate like in the Scandinavian countries. Therefore there is not a integrated approach.

In the Netherlands the province of Limburg made a risk-map for planning purposes. The map shows global data on risks so that authorities of police, fire and ambulance as well as the municipalities and planning authorities know on which objects they have to focus. The municipalities are responsible for making detailed plans for each (group of) object(s). The risk-map does not show data required for intervention.

The participants from Luxembourg, France and Austria reported that they use risk mapping in their country especially in professional fire services. On the regional level this risk mapping has become more important with respect to flooding, transport of dangerous goods, important natural risks, avalanches, etc.

Mainly because of financial reasons the use of GIS-systems is not wide-spread within the majority of countries present.

## ***Data collection for risk mapping***

In the discussion it became clear that the collection of data on risks is a huge problem in each country. The data interesting for risk mapping are spread over a wide variety of authorities and institutions. It is very difficult to find out which data are available and where you can get them. Another problem is the quality of the data and their maintenance.

## ***Sources for maps***

In Norway and Finland there is a national agency for maps. Also there is a mapping server on a national level. The national agency provides the municipalities with maps and encourages them to use them for several purposes (also for risk mapping).

In Sweden, Germany and the Netherlands there is not such a national agency, but often a privatised organisation. Obtaining maps from these organisations or on an commercial bases is very expensive. Most of the communities do not have the money to obtain these maps.

In the workshop all delegates had the opinion that it would be very useful to have a European approach for the problem of obtaining maps. First the problem of different formats for the maps could be solved and second the problem of the prices for the maps. The working group members referred to the approach in the USA, where a national agency is responsible for providing maps to all authorities.

### ***Utilisation of maps***

Besides the identification of streets and areas within a local or regional community the main use of maps is for the identification of locations such as the stations of police, fire services, civil protection or the location of hospitals rather than the identification of risks. When it comes to inter-organisational or cross-border co-operation one mostly rely on the maps and data provided by the relevant services of the Civil defence, or on department or province level.

### ***Cross-border co-operations / information / meetings***

Between Germany and the Netherlands there are a lot of contracts on a national as well as on a regional and local level about cross border co-operation. These contracts are about mutual assistance at catastrophes and severe accidents from police, fire, ambulance.

In the Nordic countries and in UK / Ireland due to the geography (mountains, no-mans-land or seas between the countries) there are only few contracts. One is about mutual assistance with helicopters and there are some municipalities that have contracts about cross border co-operation.

On the informal level there are a lot of contacts and co-operation between countries adjacent to each other such as Luxembourg/Germany/France or Belgium/Germany or Belgium/Netherlands or Austria/Germany.

Very seldom one can find real contracts about mutual assistance on the local or regional level which is very often due to the fact that cross-border co-operation is often understood to be only necessary in the case of major disasters .

Those participants representing regions close to the border with their European neighbour saw on urgent need to work more towards regional and/or local contracts or agreements. This would overcome a variety of legal and administrative problems which may occur when cross-border operations run into liability, responsibility and assurance questions.

In the Nordic countries there is almost no exchange of data about technological risks because of the geographical situation (there are no cross border risks). They only exchange data (via the IAEA) about nuclear power plants.

Between Germany and the Netherlands the authorities must exchange certain technological risk data based upon prescriptions in several laws.



In other countries there is an informal exchange of information (mostly the location) not the data of the highest technological risks.

With reference to exchange of less sensitive data one has to state that there is no structural exchange of data between the Nordic countries. But they meet each year (except for Iceland) on a national and regional level to exchange ideas (not agreements).

Between Germany and the Netherlands EURISKmap-project represents the first formalised data transfer between the partners of the EUREGIO Maas-Rhine (Regierungsbezirk Köln, Provincie Zuid-Limburg (NL), Provincie Limburg (NL), Province de Liège (B) and the Deutschsprachige Gemeinschaft (B) ) representing the fire and rescue services and the relevant authorities respectively. While there have been informal data exchanges via information or exercises between the fire and rescue services as well as the police for several years, the police has already up their EMMI data exchange programme which does not cover exchange of risk data to be dealt with in emergency planning.

Further some five EUREGIOs are active along the common border with the Netherlands. Commissions of these EUREGIOs function as platforms for the exchange of ideas and also data.

### ***Language problems***

Obviously there are no language barriers between UK and Ireland or the Flemish part of Belgium and the Netherlands, nor between Luxembourg/Germany or Luxembourg/France or Germany/Austria.

While English is used often also in the Nordic as a common language in the co-ordination between marine rescue centres without any problems one has to rely more on the French language at the Spanish border with France.

The situation in the EUREGIO Maas-Rhine is totally different. In this region three languages are spoken: Dutch, German and French. Most people do speak only two of these languages, but not the third. In the communication on cross-border risks this is a major problem.

The organisers of the workshop are busy to overcome this situation by multi-lingual fax-sheets as well as dictionaries which were also presented during the workshop.

**Workshop on Risk Mapping ( EURISK Map )  
Hasselt, Belgium, 9 – 10 December 1999**

**Thursday, 9 December**

**Location:** County Hall of the Province of Limburg (Provinciehuis), Universiteitslaan 1

Chairman: Mr. Nico Herzig, Working Group "Public Safety" of the EUREGIO Maas-Rhine

- 9.00 – 10.00      **Registration of participants**  
*"Wake up" – Coffee/Tea*
- 10.00 – 10.10      **Opening and Welcome**  
*Mr. K. H. Lambertz, Chairman of the EUREGIO Maas-Rhine, Prime Minister of the German Speaking Community of Belgium*
- 10.15 – 10.25      **Welcoming remarks on behalf of the EU Commission**  
*Mr. E. U. Schulte, European Commission, DGXI*

**Session 1: RISK ASSESSMENT – Background information**

- 10.30 – 10.50      **The APELL programme - Risk assessment in a local community**  
*Dr. Goldschmitt, United Nations*
- 10.50 – 11.05      **Break**
- 11.05 – 11.35      **The map as an instrument for the assessment of risks**  
*Professor dr. M-J. Kraak, The Netherlands*
- 11.40 – 12.10      **Dynamic GIS for the assessment of regional development**  
*Mr. W. Groothuysen., RIKS B.V., The Netherlands*
- 12.15 – 12.45      **Collection of Risk data**  
*Ir. G. W. M. Tiemessen, AVIV, The Netherlands*
- 12.50 – 14.00      **Lunch**

**Session 2: The EURISK-project – Aims, Background, Follow-up**

- 14.15 – 14.30      **Tools for Euregional cross-border communication**  
*Dr. D. Nuessler, Fire brigade Aachen, Germany*
- 14.35 – 15.20      **Presentation of the project - aims, tools, final CD**  
*Q. Klinkers, Department of Computer Science, University of Maastricht, The Netherlands*
- 15.25 – 15.50      **EMMI – Communication tool for the Euregional Police**  
*Mr. H. de Heus, Police South Limburg, The Netherlands*
- 15.55 – 16.25      **Break**



### **Session 3: Realisation of the EURISK project - Advantages and Shortcomings**

- 16.30 – 17.00     **Experience with risk-mapping**  
*Mr. N. Herzig, Province Limburg, The Netherlands*  
*Franz-Josef Schaefer, Fire brigade Aachen, Germany*
- 17.05 – 17.15     **Conclusions and Closure of day 1**
- 17.20                **Reception by the Governor of Limburg, Belgium**

### **Friday, 10 December**

*Location: Regional control room / municipal fire station (Brandweer), Willekensmolenstraat 120*

- 9.00 – 9.10        **Introduction to day 2**  
*Moderator: dr. D. Nuessler, Fire brigade Aachen, Germany*
- 9.15 – 10.30      **Working Groups**
- 10.30 – 10.45     **Break**
- 10.45 – 11.30     **Plenary Session with Report from Working Groups**  
*Moderator: dr. D. Nuessler, Fire brigade Aachen, Germany*  
*Panel of Chairmen from the Working groups*
- 11.35 – 12.10    **Demonstrations: Euregional intervention teams, integrated controlroom (fire / urgent medical assistance)**  
*Moderator: L. van Rompaey, Fire brigade Hasselt, Belgium*
- 12.15 – 12.30    **Closure and Farewell**
- 12.45                **Lunch**



## Appendix – Workshop participants

### List of participants

<b>Last name, First name Company, Authority, Organisation Title</b>	<b>Street City Country</b>	<b>Phone Fax e-mail</b>
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## Appendix – Installation Manual

To install the system you should carry out the following steps.

First make sure there are no old installations of the EuriskMap program. To verify this, open the 'Control Panel' using 'Start' → 'Settings' (English version of Windows). Subsequently, double click on 'Add/Remove Programs'. In the window that now opens, look for 'Eurisk' or 'EuriskMap'. If you find it, click on the 'Add/Remove' button. If you are asked whether to remove everything, answer with Yes.

Insert the CD into the CD-drive.

Open the windows explorer and select the CD-drive, or open 'My Computer' (English version of Windows) on your desktop using a double click and subsequently open the CD-drive.

Open the folder 'EuriskInstall'.

Double click on 'Setup(.exe)'. The EURISK Map prototype will now be installed on your computer.

The EURISK Map prototype accesses the database through the ODBC interface. ODBC is a part of Microsoft Office and should be present on your computer if you have a full installation of Microsoft Office. There are two things you that must do, (1) check whether ODBC contains the right version of the required drivers, (2) inform ODBC about the EURISK Map Database.

To check the drivers, open the 'Control Panel' using 'Start' → 'Settings'. Double click on '32bit ODBC'. This will open a window containing the 'ODBC Data Source Administrator'. Click on the tap 'ODBC Drivers' and verify whether it contains the Microsoft Access Driver version 3.50 or higher. If the driver is not present or if ODBC does not contain the right version of the driver, install the drivers that you find in the folder 'ODBC-drivers'.

To inform ODBC about the EURISK Map Database, open the 'Control Panel' using 'Start' → 'Settings'. Double click on '32bit ODBC'. This will open a window containing the 'ODBC Data Source Administrator'. Click on the tap 'System DSN' and subsequently on the button 'Add'. This will open the window 'Create New Data Source'.

Select the 'Microsoft Access Driver' version 3.50 or higher, and click on the button 'Finish'. Now the 'ODBC Microsoft Access 97 Setup' window will open. Fill in the 'EURISK\_DATA' in the field for behind 'Data Source Name', and click on 'Select'.

Now select the database 'EURISKMAP-GB97.mdb' in the directory 'C:\Eurisk\Data\' and click on 'OK'. Click 'OK' in the 'ODBC Microsoft Access 97 Setup' window and the 'ODBC Data Source Administrator' window.

When you start the EuriskMap program for the first time, it might show a window saying 'File not found'. This is not a bug in the program or something that went wrong during the installation. It means that the program cannot find the file containing the network (TCP/IP) address of the FTP-server from which a new version of the database can be downloaded. To avoid that this message appears again, click on the button 'Update' after the program has started up completely. This will open the window for downloading a new version of the database. Fill in the correct network address of the FTP-server and click on 'Save address'. If the address unknown, click on 'Save address' anyway. Close the window by clicking on 'Cancel'.





## Appendix – System usage

### Starting the program

You can start the program using 'Start' → 'Programs' → 'EuriskMap' → 'EuriskMap' (English version of Windows). You can of course also place a shortcut on the desktop for quicker access.

After starting the program, the program will first ask for a name and a password of the database. Since we did not put a password on the database, it suffices to click on 'OK'.

Subsequently the program asks you to select a map. On the top level there is usually only one map. By clicking on 'OK' without selecting a map the first map in the list of maps is chosen. The program will show the selected map with the risk objects displayed on top of it.

### Using the program

A map can be too large to be shown completely on the screen. If not the whole map is visible, you can change the part that is visible using the arrows. Clicking on the arrows will change the view of the map.

You can zoom into an area by selecting the area on the map and by subsequently clicking on the zooming button. An area is selected in the following way. Press the left button of the mouse (a right-handed mouse). Move the mouse while pressing the left button, to select the area. Release the left button of the mouse. The selected area is shown as a blinking rectangle.

Instead of zooming you can also select a more accurate map. First you select the area of which you wish to have a more accurate map. Subsequently, you click on the level button. Now the program asks you to select a map since there can be more than one more accurate map of the selected area at the next level.

The different icons show the type of risk objects. To get detail information of any of the displayed objects, just click on its icon. This will open a window showing information such as: the name, address, type, the dangerous materials that are stored, and so on.

There are buttons for printing the map, for showing the legend, for choosing the risk objects to be displayed on the map, for downloading a new database over a network, for choosing the representation of areas, and so on.

### Opening the database

There are four different forms for accessing and modifying the information stored in the Eurisk Map database. Each of the forms is in a different language. There is an English, a French, a German and a Dutch form. Which form you choose to access and modify the database makes no difference. The results are always stored in the same database. You can open a form using: 'Start' → 'Programs' → 'EuriskMap' → '<language> Database'.

### Editing the database

When you add a new object to the database, click on '► \*' at the bottom of the form. This will give you an empty form. After entering the name of an object, you must select a category, a co-ordinate system and an editor. Furthermore, you must enter at least one co-ordinate. The co-ordinates must be numbered. The first co-ordinate always has the number '0'. Every new co-ordinate has a number that is '1' higher than the previous co-ordinate.

You can also edit the list of categories and the list of materials. On the form will find buttons for this purpose. To ensure that the proper information is shown when changing the language of the form as described above, you should specify the name of the category and the name of the material in all four languages.



## Appendix – Map Symbols

