

D1.1b MITRA User requirements

MITRA - FP6 - STREP (511361)

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0.1	10/02/05	All	Draft
1.0	24/02/05	All	Release containing consortium URR agreements
2.0	28/02/05	Page 6 and section 3	Comments received from Deimos about user requirements identification nomenclature
3.0	03/05/05	<p>Page 2 (acronyms list): Inclusion of SAMUR term.</p> <p>Page 4 (glossary): Inclusion of Multi-element vehicle concept description.</p> <p>Page 11 (section 3.2): Added new requirement UR 031.</p> <p>Page 19 (section 3.2): Revision of UR 36. It has been corrected (change of "chapter 5.3" to "chapter 5.4").</p> <p>Modify risk by hazard according to SDR.</p> <ul style="list-style-type: none"> <li>- Page 9 "receive alert" description.</li> <li>- Page 14 UR 10 and UR 11 definition.</li> <li>- Page 20 UR 35 definition.</li> <li>- Page 22 UR 43 definition.</li> </ul> <p>Page 8 and 9 (section 3.1.1) modification of vehicle, first responder and other information providers definition according to SDR.</p>	Changes added after internal revision and project quality evaluation.
4.0	31/01/06	Inclusion of annex 2 "User Requirements Methodology". Acronyms list update.	Inclusion requested by the EC during the 1st MITRA Annual Review.



## *Table of Contents*

1	Introduction .....	4
1.1	Structure of the document .....	4
1.2	Applicable and reference documents .....	4
1.2.1	Applicable documents.....	4
1.2.2	Reference documents.....	5
2	Requirements Nomenclature .....	6
3	User Requirements .....	8
3.1	MITRA System Actors and Use Cases.....	8
3.1.1	Actors.....	8
3.1.2	Uses.....	8
3.1.2.1	Nominal/Alert Situation .....	9
3.1.2.2	Crisis Situation.....	10
3.2	List of requirements from users.....	10
3.2.1	Monitoring and control .....	10
3.2.1.1	Up to date situation.....	10
3.2.1.2	Potential Risks and Hazards .....	14
3.2.1.3	Receive an Alert .....	15
3.2.2	Triggering Alert .....	16
3.2.3	Maintaining the system .....	17
3.2.4	Providing Surroundings Information .....	17
3.2.5	Monitoring the crisis situation.....	18
3.2.5.1	Exact knowledge of the situation .....	18
3.2.6	Receiving Support to Decision.....	22
3.2.6.1	Actions to be Taken and applicable procedures .....	22
3.2.6.2	Risks and consequences .....	24
3.3	List of requirements from systems and projects.....	25
3.3.1	Systems .....	25
3.3.2	Projects .....	25
3.4	List of requirements from regulations and standards .....	28
3.4.1	Regulations .....	28
3.4.2	Standards.....	29
	Annex 1. Procedural Requirements.....	31
	Annex 2. User Requirements Methodology.....	34



## Glossary

<b>Carrier</b>	The enterprise, which carries out the transport operation with or without transport contract. [RD7]
<b>Crisis situation</b>	Situation requiring an action beyond the control of the driver, involving at least one of the civil security bodies (fire brigade, police, medical services...), but not requiring the involvement of all public services (e.g. catastrophe situation) [RD6].
<b>Hazard identification number</b>	<p>Indicates the potential risk represented by the cargo. It consists of two or three figures indicating the following hazards:</p> <ul style="list-style-type: none"> <li>2 Emission of gas due to pressure or chemical reaction</li> <li>3 Flammability of liquids (vapours) and gases or self-heating liquid</li> <li>4 Flammability of solids or self-heating solid</li> <li>5 Oxidizing (fire-intensifying) effect</li> <li>6 Toxicity</li> <li>7 Radioactivity</li> <li>8 Corrosivity</li> <li>9 Risk of spontaneous violent reaction</li> </ul> <p>Doubling of a figure indicates an intensification of that particular hazard. Where the hazard associated with a substance can be adequately indicated by a single figure, this is followed by a zero.</p> <p>If a hazard identification number is prefixed by letter 'X', this indicates that the substance will react dangerously with water.</p> <p>For further details see [RD8] Part 5-section 5.3.2.3.1.</p>
<b>International Chemical Safety Cards (ICSCs)</b>	<p>International programme on Chemical Safety Project. ICSCs project is an undertaking of the International Programme on Chemical Safety (IPCS). An ICSC summaries essential health and safety information on chemicals. ICSCs are not legally binding documents, but consist of a series of standard phrases, mainly summarising health and safety information collected, verified and peer reviewed by internationally recognised experts. Taking into account advice from manufactures and Poison Control Centres.</p> <p><a href="http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/intro.htm">http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/intro.htm</a></p>
<b>Multi-element vehicle</b>	<p>Dangerous goods are transportation of interest in MITRA is performed by road and rail. Each of these vehicles are composed of different elements:</p> <ul style="list-style-type: none"> <li>• Road transportation: tractor and trailer.</li> <li>• Rail transportation: locomotive and wagons.</li> </ul> <p>The transport will carry part of the system (the On-Board Terminal/s) since it must send current information related to the transport, such as the current position and dynamic cargo information. According to the "multi-element vehicle" there will be two types of OBT:</p> <ul style="list-style-type: none"> <li>• Master OBT: located on the vehicle puller (tractor or locomotive). It will receive information from the different element OBTs.</li> <li>• Element OBT: located in each element of the vehicle (trailer or wagon). There will be an element OBT for each trailer or wagon. It will receive information from sensors located on the containers carried on the trailer or wagon on which is installed the element OBT.</li> </ul>
<b>Nominal situation</b>	No incident happens.
<b>Packing</b>	Group to which, for packing purposes, certain substances may be assigned in



<b>Group</b>	accordance with their degree of danger. The packing groups have the following meaning, which are explained more fully in Part 2 of [RD8]. [RD7] <ul style="list-style-type: none"><li>• Packing group I: Substances presenting high danger.</li><li>• Packing group II: Substances presenting medium danger.</li><li>• Packing group III: Substances presenting low danger.</li></ul>
<b>Pre-planned route</b>	It contains data and time of departure, expected stops, origin and final destination. This route shall agree with the schedule according to the routes to transport dangerous goods.
<b>Transport Emergency Cards</b> (TREMcards)	Cards providing information of the initial actions to be taken in a crisis situation for each specific dangerous substance. <a href="http://www.tremcards.com">http://www.tremcards.com</a>
<b>UN number</b>	Four-figure identification number of the substance or article taken from the UN Model Regulations. [RD7]
<b>Vehicle ID number</b>	Unique vehicle identification number per transport generated automatically by the system per substance transported.
<b>Virtual Identity Card</b>	Virtual card displayed to the operator that contains relevant information about the transport. This card can be displayed on operator request in either monitoring and crisis situations. It contains the following information: <ul style="list-style-type: none"><li>• Vehicle ID.</li><li>• Vehicle license number <i>e.g.: 9452BCD</i>.</li><li>• Carrier (Vehicle company owner name).</li><li>• Products permitted (for transportation to the vehicle).</li><li>• Driver license number <i>e.g.: 0845732IM</i>.</li><li>• Driver clearances to carriage certain transport.</li><li>• Pre-planned route.</li><li>• Cargo UN number. <i>e.g.: for petrol 1203</i>.</li><li>• Cargo Hazard Identification number. <i>e.g.: for petrol 33</i>.</li><li>• Packing group. <i>e.g.: for petrol II</i>.</li><li>• Current cargo amount.</li><li>• Cargo recommended status (temperature, pressure) during the monitoring and alert situation. <i>e.g.: T = 293,15 K, P = 1 bar</i> (considering international system of measures, SI).</li><li>• International Chemical Safety Card number. <i>e.g.: for petrol 1400</i>.</li><li>• Type of vehicle transporting dangerous goods. <i>e.g. partitioned cylinder</i>.</li></ul>

## *Acronyms*

AD	Applicable Document.
ADNR	Regulation for the Carriage of dangerous substances on the Rhine.
ADR	European agreement concerning the international carriage of dangerous goods by Road.
ARTIS	Advanced Road Transport Informatics In Spain.
CASU	Cellule d'Appui aux Situations d'Urgence.
CEDRE	Centre de Documentation, de Recherche et d'Expérimentation sur les pollutions accidentelles des eaux.
CIM	International Carriage of Goods by Rail.
CITRA	Control of Dangerous Goods Transport in International Alpine Corridors.
COTIF	Convention concerning international carriage by rail.
CRTD	Convention on Civil Liability for Damage Cause during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels.
CS	Communication Server.
DEI	Data Exchange Infrastructures.
deNIS	Deutsches Notfallvorsorge-Informationssystem.
DoW	Description of Work.
EMOGES	Monitoring System for Hazardous Goods Transport in Austria.
ESDI	European Spatial Data Infrastructure.
ETIS	European Transport Policy Information System.
FRAME	Freight Management in Europe.
GINIE	Geographic Information Network In Europe.
GIS	Geographical Information System.
GPRS	General Packet Radio Service.
GPS	Global Positioning System.
GRAL	Gefahrgut-Risikoanalyse.
GSBL	Gemeinsamer Stoffdatenpool Bund/Länder.
HRA	Human Reliability Analysis.
HTML	Hypertext Markup Language.
ICAO	International Civil Aviation Organisation.
ICAO-TI	International Civil Aviation Organisation Technical Instructions.
ICSCs	International Chemical Safety Cards.
IDSS	Intelligent Decision Support System.
IMDG Code	International Maritime Dangerous Goods Code.
IMO	International Maritime Organisation.
INSPIRE	INfrastructure for SPatial InfoRmation in Europe.
IPCS	International Programme on Chemical Safety.



ISO	International Standards Organisation.
KOVERS	Kompetenzverbund Risiko- und Sicherheitswissenschaften.
MHIDAS	Major Hazard Incident Data Service.
MITHOS	Monitoring Intermodal Transport of Hazardous Goods.
MITRA	Monitoring an intervention for the transportation of dangerous goods.
MW&A	Monitoring, Warning and Alert.
N/A	No applicable.
OBT	On-Board Terminal.
PDB	Public Data Bases.
PORTICO	Portuguese Road Traffic Innovations on a Corridor.
RD	Reference Document.
RID	Regulation concerning the International carriage of dangerous goods by Rail.
RID	Review Item Discrepancy.
RKP	Risk Knowledge Platform.
SAMUR	Servicio de Asistencia Municipal de Urgencia y Rescate (Medical Service body of Madrid council).
SDR	System Definition Review.
SOLAS	International Convention for the Safety of Life at Sea.
STREP	Specific Targeted Research Project.
TN	Technical Note.
TREMcards	Transport Emergency card.
TUIS	Transport-Unfall-Informationen- und Hilfsleistungssystem.
UMT	User Monitoring Terminal.
UN	United Nations.
UNREC	United Nations Recommendations on the Transport of Dangerous Goods. Model Regulations.
URR	User Requirements Review.
VCI	Verband Chemischer Industrie.
WGS	World Geodetic System.
WP	Work-Package.

## 1 Introduction

The objective of this document is to present the User Requirements of the MITRA system. In the scope of this study User Requirements have been considered those requirements collected from the following sources:

- selected<sup>1</sup> group of users,
- projects and systems with similar objectives to MITRA,
- European regulations and standards.

Three kinds of techniques have been applied for the elicitation of requirements. The first one deals with the performance of interviews to a selected group of experts. The second one is referred to the organisation of a working meeting (workshop) with experts to consolidate the previous work. Finally the third type of technique comes from the study of the right documentary sources.

To obtain requirements from the selected group of users it has been combined the two first techniques explained before. The first step has been the performance of personal interviews [RD1] to extract a preliminary list of user requirements. Then this preliminary list has been used as input to guide the discussion of experts that has participated on the 1<sup>st</sup> MITRA Workshop whose objective was to obtain a consolidated list of user requirements validated by users.

Requirements from the remaining sources have been collected with a combination of interviews and documentary studies.

This document also presents the requirements related to the procedural use of the system that were expressed by users during the 1<sup>st</sup> MITRA Workshop.

### 1.1 Structure of the document

The present document is structured as follows:

- Section 1 describes the introduction, purpose and reference documents.
- Section 2 describes the nomenclature used in the characterisation and definition of requirements.
- Section 3 describes the list of user requirements classified by the source (users, systems, projects, regulations and standards). This section also presents the system actors and uses defined in the scope of the study. Note that depending on the source, user requirements have been classified in different ways: in the case of requirements collected from users they have been classified according the system uses (section 3.1). The other requirements have been expressed attending to their source.
- Annex 1 describes the procedural requirements collected during the 1<sup>st</sup> MITRA Workshop.

### 1.2 Applicable and reference documents

#### 1.2.1 Applicable documents

- AD1** Contract n°FP6-511361, MITRA (Monitoring and Intervention for the TRANsportation of Dangerous Goods), Commission of the European Communities, Information Society Directorate General, Specific Targeted Research Project (STREP), date of signature 26 July 2004.
- AD2** Annex I to MITRA contract, Description of Work, 28 May 2004.
- AD3** Annex II to MITRA contract, General conditions, 23 October 2003.

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<sup>1</sup> The selection it has been performed covering the important roles identified in the transportation of dangerous goods (RD1)

- AD4** Consortium Agreement for MITRA Project (contract n° 511361) – 6<sup>th</sup> Framework Programme of the European Community (2002-2006) Information Society Directorate-General - Version 1.0 of 14 July 2004, revision 01 of 16 August 2004.
- AD5** MITRA Kick-Off Minutes of Meeting (Steering Committee), MITRA/MM/M3S/WP0/KO-04-09-28-29/v1.0 – version 1.0.
- AD6** MITRA, Requirements Elicitation Template, version 0.1, 26/11/2004.
- AD7** MITRA Baseline Scenario, version 1.0, 31/01/2005.

## 1.2.2 Reference documents

- RD1** TN 112.2. User Questionnaire, version 1.0, 22/11/2004.
- RD2** TN 112.1. Survey Template, version 2.0, 25/11/2004.
- RD3** TN 112.2. Survey template Regulations/Standards, version 0.1, 03/12/2004.
- RD4** TN 115.1. MITRA preliminary requirements from users, version 0.1, 23/12/2004.
- RD5** TN 114.1. MITRA preliminary requirements from systems, projects, regulations and standards, version 0.1, 23/12/2004.
- RD6** D1.1.a 1st MITRA Workshop Report, version 1.0 31/01/2005.
- RD7** European agreement concerning the international carriage of dangerous goods by Road. (ADR) 2005 Part 1. "General provisions and provisions concerning dangerous goods substances and articles". <http://www.unece.org/trans/danger/publi/adr/adr2005/English/Part1.pdf> - 589k - 26/Jan/2005.
- RD8** European agreement concerning the international carriage of dangerous goods by Road. (ADR) 2005. <http://www.unece.org/trans/danger/publi/adr/adr2005/English>
- RD9** Annex 1 to Appendix B (Uniform Rules Concerning the Contract for International Carriage of Goods by Rail (CIM) of COTIF (Convention concerning international carriage by rail). [http://www.otif.org/pdf\\_external/e/cotif-rid-1980-e.PDF](http://www.otif.org/pdf_external/e/cotif-rid-1980-e.PDF)
- RD10** Chapter VII, part A, of International Convention for the Safety of Life at Sea (SOLAS Convention), published by the International Maritime Organisation (IMO), London. [http://www.imo.org/Conventions/contents.asp?topic\\_id=257&doc\\_id=647](http://www.imo.org/Conventions/contents.asp?topic_id=257&doc_id=647)
- RD11** Technical instructions for the Safe Transport of Dangerous goods by Air, which complement Annex 18 to the Chicago Convention on International Civil Aviation (Chicago 1944), published by the International Civil Aviation Organisation (ICAO) in Montreal. [http://www.icao.int/eshop/annexes\\_list.htm](http://www.icao.int/eshop/annexes_list.htm)

## 2 Requirements Nomenclature

User requirements have been presented by using the template defined in [AD6]. As said in the referred document, the template for requirements include the following fields:

- **ID:** It is the Identification Number, it should be unique for each requirements. For this reason it will have the following format: **UR-NN**, where
  - **NN:** It is the number of requirement. Each time a partner identifies a requirement he/she gives a number to the requirement. Numbers must be unique.
- **SOURCE:** It is the source of the requirements, it can be *USERS*, *SYSTEMS*, *PROJECTS*, *REGULATIONS* or *STANDARDS*.
- **QUESTION:** It is the number of the question or questions from the questionnaire from which the requirement has been extracted. If is not possible to identify refer the questionnaire used for the requirement elicitation: RD1, RD2 or RD3. If a new requirement is added as a result of the user requirements review or system definition review this field will include URR or SDR respectively.
- **VERSION:** Version of the requirement. 1 indicates that the requirement has been maintained from the user interviews, 2 indicates a modification of the initial requirement performed in the 1<sup>st</sup> MITRA Workshop, 3 indicates that the requirement description field has been modified during the URR, and finally 4 indicates that the requirement description field has been modified during the SDR.
- **PRIORITY:** It is a subjective parameter. It should be established between the person that have performed the interview and the customer (user, system representative, regulation expert...). The scale will be *HIGH*, *MEDIUM*, *LOW* and *OUT*.
- **FEASIBILITY:** It is a subjective parameter. Feasibility should be based upon an understanding of such things as the current state of technology (e.g., commercially available components vs. original research), the customer's environment (e.g., readiness or capability to accept the change), and the risk of cost associated with a particular requirement. It should be established between the person that have performed the interview and the customer (user, system representative, regulation expert...). The scale will be *HIGH*, *MEDIUM*, *LOW* and *OUT*.
- **TYPE:** *FUNCTIONAL* or *NON FUNCTIONAL*. Functional requirements will be all those system capabilities related to the system functionality (e.g. services), regardless the system implementation. Non Functional requirements will be the rest of requirements, more related to the system implementation (e.g. architecture).
- **SCOPE:** Is the requirements related to a specific component of the system or its does affect the whole system (*ALL*). System components, according to the DoW [AD2]:
  - Public Data Bases (PDB).
  - Risk Knowledge Platform (RKP).
  - Data Exchange Infrastructure (DEI).
  - Communication Server (CS).
  - User Monitoring Terminal (UMT).
  - On-Board Terminal (OBT).
- **SITUATION:** Is the requirement specific to any of the two situations considered in MITRA (*NOMINAL/ALERT* and *CRISIS*) or no? In case the answer is yes, specify the situation.
- **Description:** It will include all the needed information that describes the requirement, apart from the previously stated. Normally it should be a statement, but it also may include a figure, table, etc. For the description the above mentioned properties must be met: Abstract, Unambiguous, Traceable and Validatable.



Project: MITRA - FP6 - STREP (511361)  
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Version: 4.0  
Date: 31/01/2006

- **Note:** This field has been added during the URR process. It contains the justification of feasibility problems that are envisaged for the implementation of the requirement.

**Note that since revisions could imply adding or removal of requirements the numbering of the requirements could be affected in the different document versions.**

## 3 User Requirements

### 3.1 MITRA System Actors and Use Cases

Before the definition of User Requirements it is needed to identify and describe all the “Actors” involved in the use of the MITRA system and how is the relationship between the identified actors and the system. Each identified actor will use the system in a different way, the interaction that each actor may have with the system is what is considered as “Use” of the system.

After the identification and definition of the actors and the uses, a more extended description of the uses will be given. This description will be based upon the user requirements extracted from the survey through the user questionnaires and workshop.

#### 3.1.1 Actors

- **Operator:** He or she is the person sited in the Regional Control Centre, which is in charge of monitoring the screen at the MITRA system. He will receive all the information provided by the system in both Nominal and Crisis situations and will use the information according to the established procedures. It has to be taken into account that the procedures that define the use of the information by the operator (e.g.: Emergency procedures) are external to the system, thus they should not be used for the definition of requirements. However, the information received by the operator will be used by third parties such as the called MITRA users, which are indeed who are going to obtain benefits from the use of the system. For this reason benefits expected by the users will be taken into account when defining the requirements related to the use of the system by the operator.
- **Consignor:** means the enterprise which consigns dangerous goods either on its own behalf or for a third party [RD8]. He or she will be in charge of providing to the system all the information related to the cargo and pre-planned route for each of the planned transports.
- **Vehicle owner/Carrier:** He or she will be in charge of providing to the system all the information related to the vehicle and tank characteristics for each of the planned transports before the transportation.
- **System Administrator:** He or she will be in charge of maintaining the system and all the information needed for its correct operation. Among others, he will be in charge of ensuring that all the information included in the internal data bases are up to date.
- **Vehicle:** The vehicle is an important actor within the MITRA system operation. It will transport the dangerous goods and, thus, will be monitored by the operator through the MITRA system. Due to the nature of the transportation it has to be distinguished the different elements that compose each vehicle “*multi-element vehicle*” concept:
  - Road transportation: tractor and trailer.
  - Rail transportation: locomotive and wagons.

Note that at the same time each trailer and wagon can transport different substances that are carriage in specific containers [see glossary].

The transport will carry part of the system (the On-Board Terminal/s) since it must send current information related to the transport, such as the current position and dynamic cargo information. According to the “multi-element vehicle” there will be two types of OBT:

- Master OBT: located on the vehicle puller (tractor or locomotive).
- Element OBT: located in each element of the vehicle (trailer or wagon) with input signals to receive the information from the containers.

- **First responder:** reliable source of information. He/She could be a member of the first intervention teams that provides first hand information of the accident characteristics of relevance for MITRA system as the type of accident and the type of vehicle. This information is communicated to the operator by radio or mobile phone.
- **Other Information Providers:** any other provider of information. He/She could be a witness of the accident.

### 3.1.2 Uses

Uses are all the interactions that are expected to be performed by the actors to the system. Since two situations of operation are considered for the MITRA system (Nominal Alert and crisis), the uses will be classified according to these situations.

#### 3.1.2.1 Nominal Alert Situation

- **Monitoring and Control:** In the Regional Control Centre, the operator will monitor and control all the vehicles (road and rail) that are transporting dangerous goods within his/her zone of responsibility. He/she will be access to up to date information about the transports and all the needed information to develop his/her functions. Information provided to the operator will be real time knowledge, related to the vehicle and the cargo, and information related to the surroundings of the location of the vehicle and providing transport information. This use of the system includes the following three uses:
  - **Up-to date Information:** The operator will receive up-to date information related to the vehicle and its cargo. He or she will receive the current position of the vehicle, current time truck company owner of the transportation, identification, characteristics and status of the cargo. He/she will also have access to surroundings information that may affect the transport such as extraordinary events, geographical and physical characteristics of the area crossed by the vehicle, large human concentrations and populations, constraints of everyday life, presence of social structures, etc.
  - **Potential Risks:** The operator will also receive information processed by the MITRA system regarding to potential risks and hazards represented by the vehicle and the goods transported.
  - **Receive alerts:** The system will alert the operator when there is a serious hazard of crisis according to the evaluation of the situation performed by the system.
- **Triggering Alert:** Although the system will be able to trigger alert automatically through the evaluation of the information, it will also provide the means for doing it manually. Both the operator and the vehicle (e.g. the driver) will be able to trigger alarms manually.
- **Providing On-board Information:** The vehicle will provide all needed on-board information that will be received by the system through the on-board terminal. Among others, this information includes the current position of the vehicle. It could also include other dynamic information related to the status of the cargo.
- **Maintaining the System:** This use includes all the tasks and activities that must be performed in order to ensure the correct and efficient operation of the system.
  - **Maintain data bases:** Regarding the operation of the system and the services that it provides, it is of utmost importance the maintenance of the internal data bases of the system, such as geographical information, criteria for risk assessment, or surrounding information that does not come from external data bases.
- **Providing surroundings information:** Other information of the surroundings of the vehicles must be provided to the MITRA system for its operation. Among other, this information may include the occurrence of an extraordinary event, constraints of every day life and all the information that is not provided by the internal data bases.

### 3.1.2.2 Crisis Situation

- **Monitoring of the crisis situation:** When a crisis situation has occurred the operator will receive by the system all the needed information to perform the monitoring of the crisis situation. The operator will need as much information as possible related to the crisis situation. Especially the Operator will need.
  - **The exact knowledge of the situation:** It can include the last known position of the vehicle and the precise identification of the cargo.
- **Receiving Support to Decision:** In addition, the operator shall receive information intended to help him/her on the decisions and actions to be taken. Among other, this information will include:
  - **Actions to be taken and applicable procedures.** It includes applicable procedure the cargo, precautions to be taken, intervention schemes suited to the type of accident, etc.
  - **Risks and Consequences,** depending on the actions and the situation. It includes estimation of consequences and impacts on the surroundings of the location of the accident.
- **Providing Information:** Some information can be either updated or provided to the system during a crisis situation. This information includes all up to date information that can help to the system to know better the situation of the crisis.

## 3.2 List of requirements from users

User requirements are classified according to the uses presented above.

### 3.2.1 Monitoring and control

#### 3.2.1.1 Up to date situation

<b>ID</b>	UR 00	<b>SOURCE</b>	USERS	<b>QUESTION</b>	URR
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b>					
The system shall provide the position of the vehicles and the information of the virtual identity card on request.					

<b>ID</b>	UR 01	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b>					
The system shall provide the means to select the interface language in the User Monitoring Terminal.					



<b>ID</b>	<b>UR 02</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to provide reliable communication means to assure data interchange in all situations.					

<b>ID</b>	<b>UR 03</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	2	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall provide the means to have data communication between the vehicle and the control centre.					

<b>ID</b>	<b>UR 031</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	SDR
<b>VERSION</b>	4	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall provide the means to allow voice communication between the vehicle and the control centre.					



<b>ID</b>	<b>UR 04</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The operator interface shall have the means to show the operator all the information introduced in the virtual identity card [see glossary]:

- Vehicle<sup>2</sup> ID [see glossary].
- Vehicle license number.
- Carrier (Vehicle company owner name) [see glossary].
- Products permitted (for transportation to the vehicle).
- Driver license number.
- Driver clearances to carriage certain transport.
- Pre-planned route. [see glossary].
- Cargo UN number [see glossary].
- Cargo Hazard Identification number [see glossary].
- Packing group [see glossary].
- Current cargo amount.
- Cargo recommended status (temperature, pressure) during the monitoring and alert situation. e.g.:  $T = 293,15 \text{ K}$ ,  $P = 1 \text{ bar}$  (considering international system of measures, SI).
- International Chemical Safety Card number. [see glossary].
- Type of vehicle transporting dangerous goods.

**Note:**

To implement pre-planned route information in the system it will be necessary that the responsible actors (consignor) are willing to provide this information.

<b>ID</b>	<b>UR 05</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to show the information organized in subject matter layers (e.g. layers containing geographical and physical information, layers containing population distribution, layers containing social structures....).

<sup>2</sup> See definition presented in section 3.1.1.



<b>ID</b>	<b>UR 06</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to provide the operator with geographical and physical information following the stabilised standards for navigation information<sup>3</sup>.

<b>ID</b>	<b>UR 07</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to provide the operator with the cargo related content of the virtual identity card (cargo UN number, cargo hazard Identification number, packing group, recommended status, cargo amount) and type of vehicle transporting dangerous goods in compliance with European regulation nomenclature:

- ADR [RD8].
- RID [RD9].
- ADRN [RD12].
- IMDG Code [RD10].
- ICAO TI [RD11].

<b>ID</b>	<b>UR 08</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to show to the operator the real time position information with a maximum error of 3-5m in order to know the accurate current position of the vehicle. This information shall agree with the European Standards for navigation information<sup>4</sup>.

<sup>3</sup> Road: Official name/ Kilometric point/ Direction  
 Street: Street name/ number of the street

<sup>4</sup> The standard physical model used for GPS applications is WGS-84.



<b>ID</b>	<b>UR 09</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to provide the operator with the current time.					

### 3.2.1.2 Potential Risks and Hazards

<b>ID</b>	<b>UR 10</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to show to the operator the potential hazards represented by the vehicle.					

<b>ID</b>	<b>UR 11</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to show to the operator the potential hazards represented by the goods.					



<b>ID</b>	<b>UR 12</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to show to the operator the potential area affected in case of an alert situation occurs.

**3.2.1.3 Receive an Alert**

<b>ID</b>	<b>UR 13</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to start a warning when there is a position deviation of the vehicle from the pre-planned route for dedicated vehicles.

<b>ID</b>	<b>UR 14</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall start a warning using the info of the on board equipment and sensors when detected a deviation from cargo recommended status (temperature, pressure, ...).

<b>ID</b>	<b>UR 15</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

Each time there is a warning the system should trigger an alert automatically.

### 3.2.2 Triggering Alert

<b>ID</b>	UR 16	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall provide the means to trigger an alert automatically when there is a position deviation of the vehicle from the pre-planned route for dedicated vehicles.

<b>ID</b>	UR 17	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	OBT	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall provide the means to trigger an alert automatically using the information of the on board equipment and sensors (temperature, pressure, ...).

<b>ID</b>	UR 18	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	OBT	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system should provide the means to send to the regional centre an e-call<sup>5</sup> in case of an automatic alert is triggered.

**Note:**

The e-call will be received by someone that is not the operator of the UMT. This issue will be taken into account in the system architecture definition.

<b>ID</b>	UR 19	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	OBT	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall provide the means to trigger an alert manually from the vehicle if the system has not triggered the alarm automatically in an alert situation.

<sup>5</sup> For further information visit <http://www.escope.info/>

<b>ID</b>	<b>UR 20</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	UMT	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall provide the means to trigger an alert manually from the control centre.					

<b>ID</b>	<b>UR 21</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to identify if it is inside a tunnel.					

### 3.2.3 Maintaining the system

<b>ID</b>	<b>UR 22</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	N/A	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> All the databases <sup>6</sup> (external and internal) that can be consulted by the system shall be up to date. All the databases shall be the last version available or it shall be able to be manually actualized.					

### 3.2.4 Providing Surroundings Information

<b>ID</b>	<b>UR 23</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT
<b>Description:</b> The system shall be able to provide the operator with the information related to the occurrence of any extraordinary events at the monitored area. Candidate events are fairs, demonstrations, sport competitions, etc.					
<b>Note:</b> The information about extraordinary events resides in external databases.					

<sup>6</sup> Constantly updated to ensure that the system is using the latest version available of information.



<b>ID</b>	<b>UR 24</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to show to the operator the presence of specific concentrations of population in zones, buildings, commercial centres, schools, etc. at the monitored area.

<b>ID</b>	<b>UR 25</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	2	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The system shall be able to show to the operator the list of hospitals specifying if those prepared to receive contaminated victims.

### 3.2.5 Monitoring the crisis situation

#### 3.2.5.1 Exact knowledge of the situation

<b>ID</b>	<b>UR 26</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show to the operator the time when the accident has been detected.

<b>ID</b>	<b>UR 27</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show to the operator the potential area affected.



<b>ID</b>	<b>UR 28</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show the operator all the information contained in the virtual identity card on request in crisis mode.

<b>ID</b>	<b>UR 29</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show the operator if the last position of the vehicle is inside/nearby a tunnel.

<b>ID</b>	<b>UR 30</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show the operator the last known position information with a maximum error of 3-5m in order to know the accurate last position of the vehicle. This information shall agree with the European Standards for navigation information [see UR 09].

<b>ID</b>	<b>UR 31</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to provide the operator with the type of vehicle transporting dangerous goods involved in the crisis situation (e.g. partitioned cylinder...).



<b>ID</b>	UR 32	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to display the operator with the available characteristics of the accident (e.g. overturned, leak...) from available information.

<b>ID</b>	UR 33	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show to the operator the last cargo amount in a crisis situation in order to know how much of the initial cargo is in the vehicle.

<b>ID</b>	UR 34	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	2	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able show to the operator the last cargo status (temperature, pressure) during a crisis situation.

<b>ID</b>	UR 35	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show to the operator the hazard information of the substance the order established following in the European Standards.

<b>ID</b>	UR 36	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system should be able to provide the operator with the same information given in the paper transport document filled-in by the consignor. See chapter 5.4 and Part 3 of [RD8] .



<b>ID</b>	<b>UR 37</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
<p>The system shall be able to provide the operator with all needed geographic and physical information of the location of the accident and its surroundings. Particularly the system will be able to provide useful information of:</p> <ul style="list-style-type: none"> <li>• Hydrography.</li> <li>• Orography.</li> <li>• Winds maps (seasonal prevailing winds).</li> </ul>					

<b>ID</b>	<b>UR 38</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
<p>The system shall be able to provide to the operator the weather information for the zone of the crisis/accident. Information regarding direction and strength of winds, snow or ice present in the affected area.</p>					

<b>ID</b>	<b>UR 39</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
<p>The system shall be able to assess and show to the operator the effect caused on the victims of the accident in order to decide what intervention teams have to be warned and what material they should take.</p>					

<b>ID</b>	<b>UR 40</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	UMT	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
<p>The system should provide to the operator the means to introduce information from first responders.</p>					

### 3.2.6 Receiving Support to Decision

#### 3.2.6.1 Actions to be Taken and applicable procedures

<b>ID</b>	UR 41	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to provide the operator with information regarding nearby equipment and material available to decant the cargo.

<b>ID</b>	UR 42	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	3	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to provide the operator with information on disposal facilities in the vicinity to be potentially used for cargo disposal.

<b>ID</b>	UR 43	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to provide the operator with hazards derived from the mixture of dangerous products involved in a crisis situation.

**Note:**

They are envisaged feasibility problems to implement this requirement due to the complexity to model the behaviour of a system composed by different types of substances.



<b>ID</b>	<b>UR 44</b>	<b>SOURCE</b>	<b>USERS</b>	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to provide the operator with the information contained in Transport Emergency Cards [see glossary] and related to particular precautions to be taken according to the cargo or dangerous products involved during an accident or crisis situation (e.g. intervention procedures, risks...).					

<b>ID</b>	<b>UR 45</b>	<b>SOURCE</b>	<b>USERS</b>	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to provide to the operator help by presenting the actions to be taken according to the established action plan. The action plan should be suited to the type of accident and particularised to the location (city, region, etc.).					

<b>ID</b>	<b>UR 46</b>	<b>SOURCE</b>	<b>USERS</b>	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to assess and present to the operator the safety level according to the accident or crisis occurred.					

<b>ID</b>	<b>UR 47</b>	<b>SOURCE</b>	<b>USERS</b>	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to show to the operator the recommended emergency treatment with the victims according to the damages.					



<b>ID</b>	<b>UR 48</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to show to the operator recommendations regarding the hospitals near the location of the accident. These recommendations should be done with the objective to transfer the victims, according to the suffered damage and the services and equipment of the hospitals.					

<b>ID</b>	<b>UR 49</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to show to the operator lessons learnt from past accidents.					
<b>Note:</b>					
Due to the lack of information this requirement will be not implemented in the prototype.					

### 3.2.6.2 Risks and consequences

<b>ID</b>	<b>UR 50</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to provide to the operator information related to the occurrence of any extraordinary events at the surroundings of the location of the accident or crisis that could be affected by the accident. Candidate events are fairs, demonstrations, sport competitions, etc.					

<b>ID</b>	<b>UR 51</b>	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS
<b>Description:</b>					
The system shall be able to show to the operator the presence of specific concentrations of population in zones, buildings, commercial centres, schools, camping etc. that may be affected by the accident.					



<b>ID</b>	UR 52	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to show to the operator possible risks and consequences related to these risks, according to the type of accident, the cargo involved and the location.

<b>ID</b>	UR 53	<b>SOURCE</b>	USERS	<b>QUESTION</b>	Interview [RD1]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The system shall be able to assess and show to the operator possible all the expected impacts on the surroundings of the accident. This information should include the boundaries of the affected geographical area.

### 3.3 List of requirements from systems and projects

#### 3.3.1 Systems

<b>ID</b>	UR 54	<b>SOURCE</b>	SYSTEMS	<b>QUESTION</b>	Functionalities [RD2]
<b>VERSION</b>	3	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

The Monitoring Warning and Alert application shall provide a complete set of information to allow the operator to minimize the response time in activating the emergency mechanisms in case of an accident. To have compatible info with the one presented in the monitoring situation.

#### 3.3.2 Projects

<b>ID</b>	UR 55	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	OBJECTIVES [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	NON FUNCTIONAL	<b>SCOPE</b>	RKP	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

Risk scenarios to be considered in the Risk Knowledge Platform shall be the result of a combination between technical and human failure.

<b>ID</b>	<b>UR 56</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	OBJECTIVES [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	NON FUNCTIONAL	<b>SCOPE</b>	RKP	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

Organisational-social environmental of geographical areas to monitor shall be considered by the Risk Knowledge Platform.

<b>ID</b>	<b>UR 57</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	OBJECTIVES [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	NON FUNCTIONAL	<b>SCOPE</b>	RKP	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

The Risk Knowledge Platform shall incorporate information from the application of a Human Reliability Analysis (HRA) technique in order to determine whether human errors could have serious consequences concerning the different transportation scenarios.

<b>ID</b>	<b>UR 58</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	GIS Component [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	UMT	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

GIS shall include at least the following information of the place of the accident:

- Topography and hydrography
- Population density
- 24 distinct uses of land use
- Roads and rail facilities and access
- Ecological areas with different degree of sensitivity

<b>ID</b>	<b>UR 59</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	GIS Component [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	CRISIS

**Description:**

Integration with the GIS and IDSS shall be incorporated in order to estimate the dispersion of substances in complex terrain.



<b>ID</b>	<b>UR 60</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	Objectives [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	NON FUNCTIONAL	<b>SCOPE</b>	ALL	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

The system shall be designed in such a way that future integration of on-board and road sided sensors, and video image processing for tracking dangerous goods transportation could be performed.

<b>ID</b>	<b>UR 61</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	Objectives [RD2]
<b>VERSION</b>	3	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	UMT	<b>SITUATION</b>	NOMINAL/ALERT

**Description:**

The UMT monitoring application shall notify the operator when the vehicle is going to or from a tunnel.

<b>ID</b>	<b>UR 62</b>	<b>SOURCE</b>	PROJECTS	<b>QUESTION</b>	Dangerous goods database [RD2]
<b>VERSION</b>	1	<b>PRIORITY</b>	N/A	<b>FEASIBILITY</b>	N/A
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	DEI	<b>SITUATION</b>	NOMINAL/ALERT CRISIS

**Description:**

The system shall incorporate a dangerous goods transportation database with information of the loaded goods on the transport (at least: type, amount, origin, destination).

### 3.4 List of requirements from regulations and standards

#### 3.4.1 Regulations

ID	UR 63	SOURCE	REGULATION	QUESTION	[RD3]
VERSION	1	PRIORITY	HIGH	FEASIBILITY	HIGH
TYPE	FUNCTIONAL	SCOPE	PDB	SITUATION	N/A

**Description:**

**INSPIRE** defines a thematic infrastructure and the content of the themes for all the geographic information.

- The structure is composed by 20 themes:
- Geographical location
- Administrative units
- Properties, buildings and addresses
- Elevation
- Geophysical environment (geology, soils, terrain)
- Climate
- Hydrography
- Ocean and seas
- Biota/biodiversity
- Land surface / land cover
- Natural resources (soil/land for agriculture, forestry, fishery, geological, energy)
- Transport
- Utilities
- Facilities
- Economy
- Area regulations
- Natural and technological risks
- Polluted sites/areas under anthropogenic stress
- Society/demography/culture
- Health

ID	UR 64	SOURCE	PROJECTS	QUESTION	Dangerous goods database [RD3]
VERSION	1	PRIORITY	HIGH	FEASIBILITY	HIGH
TYPE	FUNCTIONAL	SCOPE	PDB	SITUATION	N/A

**Description:**

The information provided by the system shall be presented according to the format expressed in the ADR<sup>7</sup> and RID<sup>8</sup>.

<sup>7</sup> European Agreement concerning the international carriage of Dangerous goods by Road.

<sup>8</sup> Regulation concerning the International carriage of Dangerous goods by Rail.

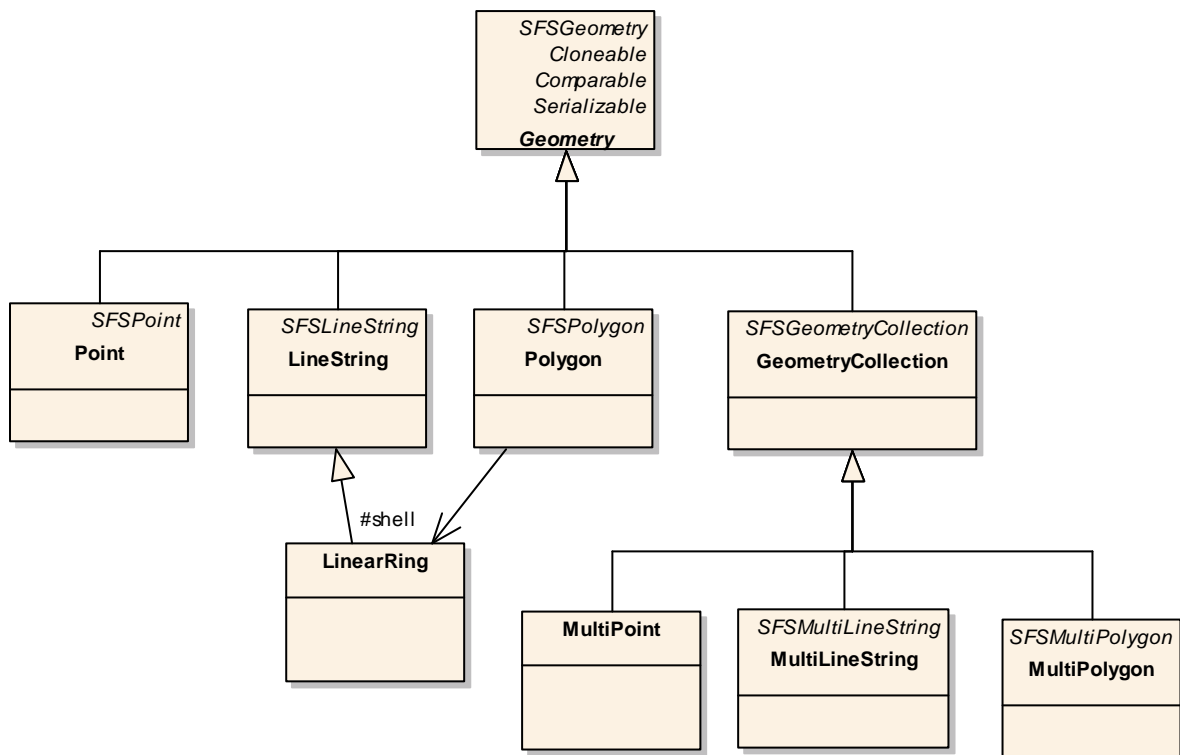
### 3.4.2 Standards

<b>ID</b>	UR 65	<b>SOURCE</b>	STANDARD	<b>QUESTION</b>	[RD3]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	HIGH
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	PDB	<b>SITUATION</b>	N/A

**Description:**

System data bases have to be compatible with the Simple Features defined by the OGC and the **ISO 19125**. This standard defines the architecture and the schema for the storage of geographical information.

The basic model is:



<b>ID</b>	UR 66	<b>SOURCE</b>	STANDARD	<b>QUESTION</b>	[RD3]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	HIGH
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	PDB	<b>SITUATION</b>	N/A

**Description:**

Geographic Information and services must be described with the metadata schema defined in the **ISO 19115**. It provides minimum required information about identification, extent, quality, spatial and temporal schema, spatial reference, and distribution of digital geographic data.

<b>ID</b>	<b>UR 67</b>	<b>SOURCE</b>	STANDARD	<b>QUESTION</b>	[RD3]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	HIGH
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	PDB	<b>SITUATION</b>	N/A

**Description:**

The Spatial characteristics of geographic features have to fulfil the spatial schema defined in the **ISO 19107**.

This regulation defines standard spatial operations for use in access, query, management, processing, and data exchange of geographic information for spatial (geometric and topological) objects of up to three topological dimensions embedded in coordinate spaces of up to three axes.

This Spatial Schema deals with the following issues:

- Simbology.
- Geometry Packages.
- Topology Packages.
- Derived topological relations.

<b>ID</b>	<b>UR 68</b>	<b>SOURCE</b>	STANDARD	<b>QUESTION</b>	[RD3]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	HIGH
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	CS	<b>SITUATION</b>	N/A

**Description:**

The interface of geographic information with position must fulfil the standard defined by **ISO 19116**.

It specifies the data structure and content of an interface that allows communication between position-providing device(s) and position-using device(s) so that the position-using device(s) can obtain and unambiguously interpret position information and determine whether the results meet the use requirements.

<b>ID</b>	<b>UR 69</b>	<b>SOURCE</b>	STANDARD	<b>QUESTION</b>	[RD3]
<b>VERSION</b>	1	<b>PRIORITY</b>	HIGH	<b>FEASIBILITY</b>	HIGH
<b>TYPE</b>	FUNCTIONAL	<b>SCOPE</b>	CS	<b>SITUATION</b>	N/A

**Description:**

Map Servers and their services have to be aware of the behaviour specified in the **ISO 19128** in order to provide uniform access from HTML clients to map.

It must support the minimum functionality detailed in this standard regarding:

- Map production.
- Answering basic questions about the content of the map.
- Communicating to other applications what kind of maps the service can produce and what kind can be consulted.

Although this standard is still under development, it is very important to fulfil its requirements in order to trigger the creation of a European Spatial Data Infrastructure (ESDI).



Project: MITRA - FP6 - STREP (511361)  
Title: D1.1b MITRA User requirements  
Ref: MITRA/User Requirements/ISDEFE/D1.1b/V4.0  
Version: 4.0  
Date: 31/01/2006

## **Annex 1. Procedural Requirements.**

## 1. Introduction and Scope

This annex contains the requirements related to the use of the system that were discussed during the 1<sup>st</sup> MITRA Workshop.

To support this information it has been selected sequence diagrams that show the interaction of the actors involved in the procedure with the systems, the information interchanged between them as well as the type of communication.

Note that the information used for the elaboration of the diagrams it has been directly taken from the workshop inputs [RD6], there have not been performed later analysis on it.

## 2. Procedural Requirements

The classification of procedural requirements has been made according to the uses defined in section 3.1.2. Actors' definition can be found in section 3.1.1.

### 2.1 Nominal Situation

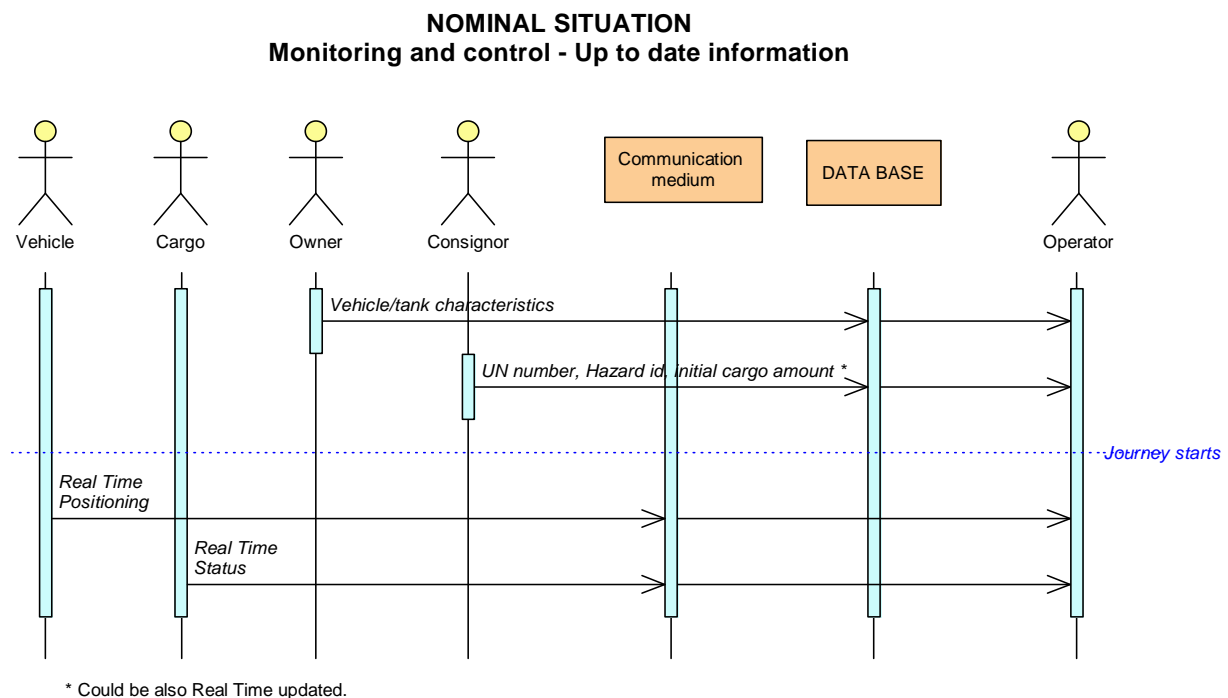


Figure 1

#### Before the Journey starting

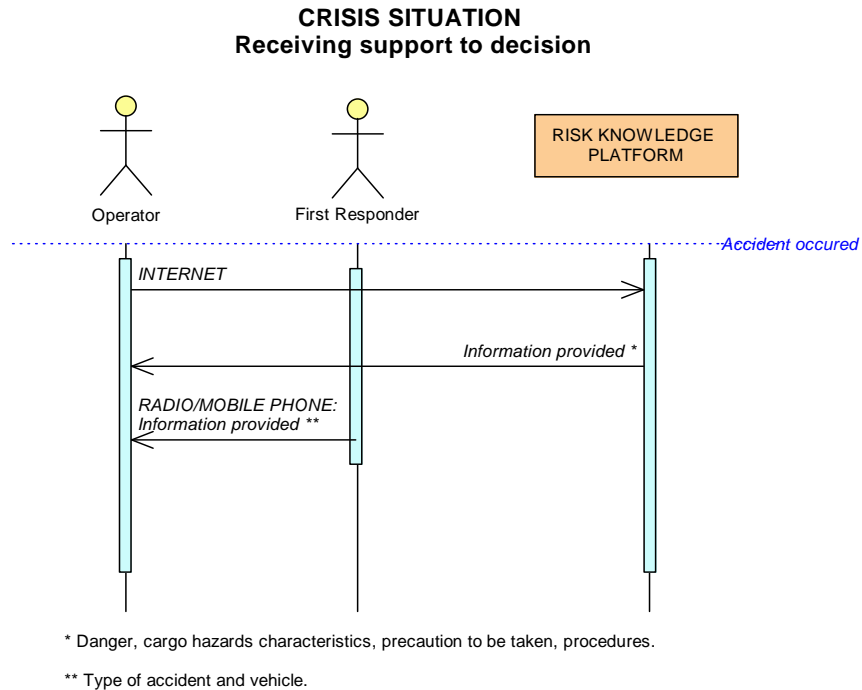
The *owner of the vehicle* introduces the characteristics of the vehicle into the system. This information is stored into the system in a database.

For each new transport the *consignor* introduces the characteristics of the cargo (UN number, and hazard identification number) and amount into the system. This information this information is stored into the system in a database and it could be real time updated.

#### After the journey starting

Real time position of the vehicle and cargo status is known during the whole transportation through a wireless communication medium.

## 2.2 Crisis Situation



**Figure 2**

After an accident occurs the *operator* of the system access the risk knowledge platform through an internet application Then the system displays him/her the information related to the danger, cargo hazards characteristics, precautions to be taken and procedures to be applied in that specific situation.

The *first responder*<sup>9</sup> provides the operator with further information of the accident as type of accident and type of vehicle. This information is communicated to the operator by radio or mobile phone.

<sup>9</sup> Is a person placed on the accident location. He/she could be the driver of the substance or a witness of the accident.



Project: MITRA - FP6 - STREP (511361)  
Title: D1.1b MITRA User requirements  
Ref: MITRA/User Requirements/ISDEFE/D1.1b/V4.0  
Version: 4.0  
Date: 31/01/2006

## **Annex 2. User Requirements Methodology**

## 4 User Requirements methodology description

### 4.1 Methodology objective

The following criteria have been defined to ensure the elaboration of a successful set of user requirements ready to feed the design phase of the MITRA system:

- The list of user requirements shall fulfil user needs
- Additionally to user needs, the user requirements list shall to consider:
  - European standards for spatial information<sup>10</sup>,
  - European regulations regarding dangerous goods transportation,
  - other existing technology similar to MITRA objectives.

### 4.2 Strategy overview

The global strategy to obtain the consolidated list of user requirements, that meet the criteria listed above, has been planned according to the following four steps:

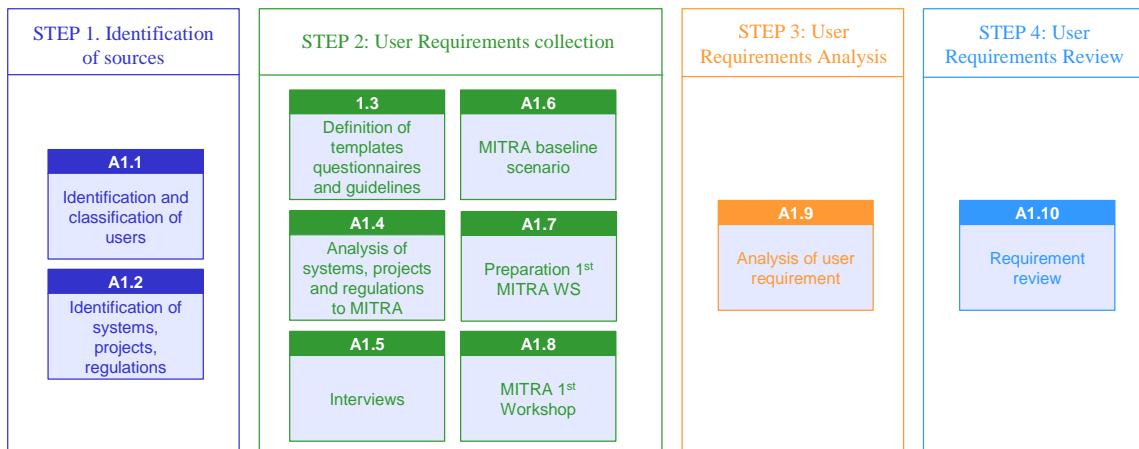
- STEP 1: Identification of Sources
- STEP 2: User Requirements Collection
- STEP 3: User Requirements Analysis
- STEP 4: User Requirements Review

Next lines detail the activities performed in each step:

- STEP 1: Identification of Sources
  - A1.1: Identification and classifications of users
  - A1.2: Identification of systems, projects, regulations/standards already existing
- STEP 2: User Requirements collection
  - A1.3: Definition of templates and questionnaires
  - A1.4: Analysis of related systems, projects and regulations/standards to MITRA
  - A1.5: Interviews
  - A1.6: MITRA baseline scenario
  - A1.7: Preparation of 1st MITRA Workshop
  - A1.8: MITRA 1st Workshop
- STEP 3: User Requirements analysis
  - A1.9: Analysis of User Requirement (3rd round)
- STEP 4: User Requirements review
  - A1.10: Requirements review

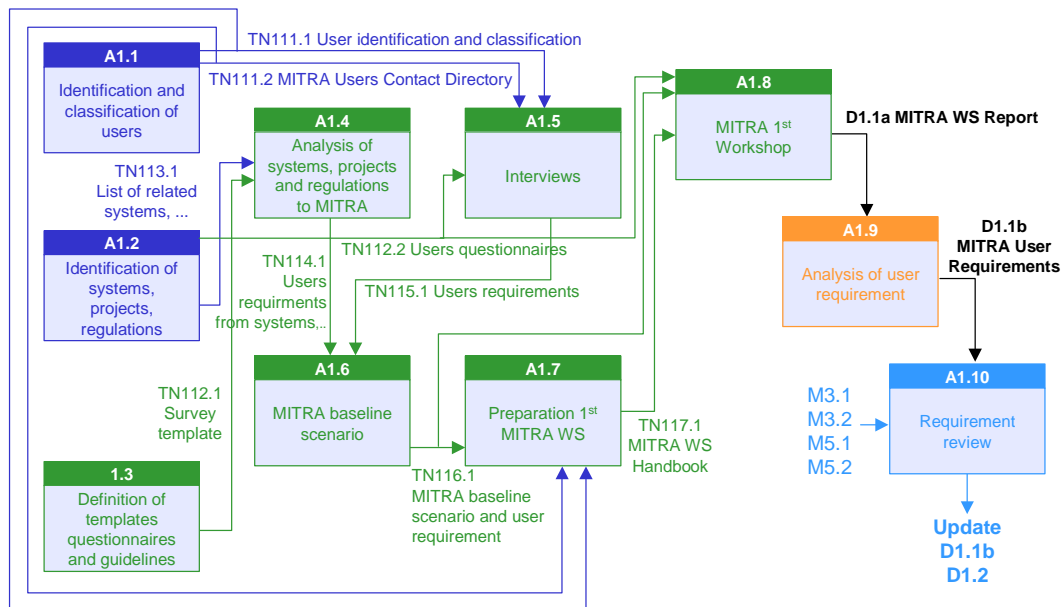
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<sup>10</sup> Including INSPIRE.



**Figure 4-1 Summary of activities**

The relationships among the activities are shown in Figure 4-2. It presents the products delivered by each activity and which activity is fed by a specific product.



**Figure 4-3 User Requirements Methodological Approach**

### 4.3 Activities detailed description

Considering the steps defined below the next sections presents a detailed description of each activity contained in the methodology.

#### 4.3.1 STEP 1. Identification of sources

The aim of this step has been to ensure that all the relevant information is included in the user requirements elaboration process.

#### **4.3.1.1 A1.1: Identification and classifications of users**

This activity consists on the selection of users of relevance for the MITRA system. Two phases have been considered within activity A1.1:

- First to identify the main users that are involved in dangerous goods transportation and crisis management in Europe,
- Second, from the identification study to obtain the list users that to be contacted in the user requirements capture phase.

During the identification phase the following criteria have been considered:

- Type of users shall include:
  - Safety Services (Police and Fire brigades)
  - Chemical companies
  - Medical Services
  - Civil security and protection bodies
  - Transporters
- Both fields rail and road transport shall be covered.
- The list of users shall contain as many European countries as possible.

The outputs of this activity have been the next internal deliverables:

- TN111.1: Report on users identification and classification.
- TN111.2: MITRA users contact directory.

TN111.1 has provided the guidelines for the selection of users of interest for the MITRA system: the classification of users and the template specifying the users contact information. These guidelines have been defined including the criteria mentioned above. A study of candidates has led to the definition of the list users for participating in the requirements collection phase of the project. This list constitutes the user contact directory (TN111.2).

TN111.2 has been used for selecting the people that has participated in the interviews and in the 1<sup>st</sup> MITRA User Workshop, activities A1.5 and A1.7 respectively.

Country	Name	Role*	Email	Phone/Fax
Germany	Mrs. Speckmann	Municipal fire brigade	heike.speckmann@stadt-duisburg.de	+ 49 203 308 2133
Germany	Mr. Johann Ertl	Police department Traunstein	Johann.ertl@polizei-bayern.de	+49 8662-66 82 100
Netherlands	Insp. Jan Malenstein	Bureau for European Affairs IST Expert	janmalenstein@planet.nl, j.malenstein@wordonline.nl	Tel. : +31318502472 Mobile : +31652528823
Germany	Mr. Peter Mauthofer	Elaboration of regulations and emergency plans.	peter.mauthofer@polizei.bayern.de	Tel. : + 498619873130 Fax : +49 89 292 12678
Spanish	Mr. José Julio Palma	Elaboration of regulations and emergency plans.	jpalma@gencat.net	Tel : +93 5867909 Fax : +34 93 586 79 90
Spanish	Mr. Javier Quiroga	Medical assistance.	quirogamfj@munimadrid.es	Tel: +34 91 5884542
Spanish	Mr. Jose Luis Sanz	Starting up the emergency plan.	jsanz@munimadrid.es	Tel: +34 915 881 370 Fax : +34 915 881 752
Spanish	Mr. Moreno	Warning reception and alerting	em.secope@guardiacivil.es	
Germany	Dr. Ulrich Haug	Scientific society of dangerous goods transporting	dr.u.haug@t-online.de	+49 351 838 71 24
Germany	Mr. Rainer Boll	Transporter	reiner.boll@vtg-rail.com	+49 40 2354-1376
Netherlands	Mr. Henk de Ruyter		henk.druyter@ivw.nl	Tel: +31 70 3052 696
Luxemburg	Mr. Gil Orazi		gil.orazi@mit.etat.lu	Tel: +352 260 286 42
Germany	Mr. Dirk OBERHAGEMANN	Industrial Hazards and Industrial Safety.	ober@safetynet.de	Tel : +49-(0)2381-271484 Fax: +49-(0)2381-271485
Germany	Mr. Alfons Hofmann	German Federal Ministry of Transport, Building and Housing	alfons.hofmann@bmvbw.bund.de	Tel: +49 228 300 2645
Germany	Mr. Rein	German Federal Ministry of Transport, Building and Housing	helmut.rein@bmvbw.bund.de	
Germany	Mr. Helmut Heckner	German Federal Bureau of Railways	HecknerH@eba.bund.de	Tel. +49 228 9826 353
Spanish	Mr. Jesus Soriano	Federación Empresarial de la Industria Química Española	jsm@feique.org	Tel: +34 91-431.79.64 Fax : +34 91-576.33.81
Spain	Mr. Rafael Abajo	Technical services of transportation	rafael.abajo@madrid.cepsa.es	+34 91 337 6000
French	Mr Eric LOUETTE	Direction des Transports Terrestres	Eric.Louette@equipement.gouv.fr	Tel : 01 40 81 82 38 Fax : 01 40 81 81 99
Spain	Mr. Jesus Perez Lopez	Elaboration of regulations and Emergency Plans	jperezlopez@itene.com	+34 96 390 5400
Spain	Mr. Federico Fernandez	Warning reception and Alerting	federico.fernandez@dgt.es	+34 91 301 8279
Spain	Mrs. Paloma Iribas	Elaboration of regulations and Emergency Plans	piribas@mfom.es	+34 91 597 5021
Germany	Mr. Konrad Vogt	Train transportation	konrad.vogt@bahn.de	Tel. 069 265-27744, Fax Mobil: 0160 97436738
Spain	Mr. Roberto Martín-Alegre	Civil Protection. Environmental risk analysis and management	pcivilcleon2@retemail.es	34659308784
Portugal	Mr. J. A Franco		jafranco@dgtt.pt	Tel.: +351/21794-9019
France	Mr. Claude Pfauvadel		claud.pfauvadel@equipement.gouv.fr	Tel.: +33/1-40818766
Netherlands	Mr. Klaas Tiemersma		klaas.tiemersma@dgg.minverw.nl	Tel.: 0031/70-351-1581
Austria	Gustav Dr. Kafka		gustav.kafka@bmvit.gv.at	Tel.: +43-1-71100-5152
Switzerland	Mr. Francois Le Fort		francois.lefort@bav.admin.ch	Tel.: +41/31-324-1209
Sweden	Mrs. Camilla Oscarsson		camilla.oscarsson@srv.se	Tel.: +46/5413-5430

Figure 4-4 MITRA Users' contact list

#### 4.3.1.2 A1.2: Identification of systems, projects, regulations/standards already existing

The aim of this activity is to identify the systems, projects, regulations and standards (including INSPIRE initiative) of interest for the MITRA system. It identifies the following aspects of interest in the monitoring and crisis management of dangerous goods transportation:

The output of this activity has been the following internal deliverable:

- TN113.1: List of related systems, projects and regulations/standards to MITRA.

This material has been analysed within A1.4.

#### 4.3.2 STEP 2. User requirements collection

This step has included all the activities needed to obtain a consolidated list of requirements validated by a selected panel of users.

#### 4.3.2.1 A1.3: Definition of templates and questionnaires

The objective of this activity has been the elaboration of the templates and questionnaires for capturing the requirements from the sources identified in the STEP 1.

The outputs of this activity have been the next internal deliverables:

- TN112.1: Survey template.
- TN112.2: Users Questionnaires.

TN112.1 contains the templates for capturing the requirements from systems, projects European regulations and standards. These templates have been completed within A1.4. On the other hand TN112.2 contains the questionnaires to be filled in by users during in the interviews in A1.5.

The next tables show the different templates elaborated within this activity. Guidelines to complete these templates have been attached to TN112.1 and TN112.2.

Points of Contact	
Project title	
Project abbreviation	
Project lead	
Project contact person	Company / Organisation / Institute: Name: Tel: Fax: E-Mail: Address:
Project partners (and nationality)	
Project webpage	
Background Information	
Project customer	<input type="checkbox"/> EC <input type="checkbox"/> ESA <input type="checkbox"/> Others: .....
Project duration	
Project budget	
Available public documentation	
Planned project events (till August 2006)	
Bilateral co-ordination with other projects <sup>11</sup>	<input type="checkbox"/> No <input type="checkbox"/> Yes, if yes: name of the other project and objectives of co-operation:
Participation to project clusters <sup>12</sup>	<input type="checkbox"/> No <input type="checkbox"/> Yes, if yes: name of the cluster (if applicable), projects involved, and objectives of co-operation:
Objectives	
Key project objectives	
Type of transport	<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ship <input type="checkbox"/> Others: .....

<sup>11</sup> The term "bilateral co-ordination" refers to any exchange or co-operation with one other project on a regularly basis.

<sup>12</sup> The term "cluster" refers to any exchange or co-operation with other projects (various) on a regularly basis.



Type of dangerous goods	
Project abstract	
Prototyping: Many projects include or are related to the design, or the design and development of a system or a prototype or a pre-functional demonstration system. If that is the case for your project please fill in the questionnaire for "Systems" in section 3.	<input type="checkbox"/> No <input type="checkbox"/> Yes, if yes: <input type="checkbox"/> Prefunctional demonstration system <input type="checkbox"/> Prototype (Please fill in the questionnaire for "Systems" in section 3.)
<b>Potential interphase to MITRA</b>	
Type of situation covered by the project	<input type="checkbox"/> Nominal Situation <input type="checkbox"/> Alert Situation <input type="checkbox"/> Crisis Situation
Type of operations covered by your project	<input type="checkbox"/> Monitoring and Control <input type="checkbox"/> Provision of Information related to transport and goods <input type="checkbox"/> Elaboration of regulations and Emergency Plans <input type="checkbox"/> Warnings reception and alerting <input type="checkbox"/> Starting up the Emergency Plan <input type="checkbox"/> Risk assessment <input type="checkbox"/> Monitoring of the different intervention teams <input type="checkbox"/> Traffic control <input type="checkbox"/> Rescue and Evacuation <input type="checkbox"/> Medical assistance <input type="checkbox"/> Initial emergency services (e.g. fire-fighting, first cleaning, ...) <input type="checkbox"/> Protection of people <input type="checkbox"/> Information to the population <input type="checkbox"/> Cleaning
GIS component	<input type="checkbox"/> No GIS required, if yes: why not: ..... <input type="checkbox"/> GIS use planned, if yes: what are the key requirements: ..... <input type="checkbox"/> GIS used, if yes: what product and data: .....
Positioning component	<input type="checkbox"/> No positioning required, if yes: why not: ..... <input type="checkbox"/> Use of positioning system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Positioning system used, if yes: brief description of system: .....
Communication component	<input type="checkbox"/> No communication required, if yes: why not: ..... <input type="checkbox"/> Use of communication system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Communication system used, if yes: brief description of system: .....
Dangerous goods database	<input type="checkbox"/> No database required, if yes: why not: ..... <input type="checkbox"/> Use of database planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Database used, if yes: brief description of system: .....
Risk knowledge system	<input type="checkbox"/> No risk knowledge system required, if yes: why not: ..... <input type="checkbox"/> Use of risk knowledge system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Risk knowledge platform used, if yes: brief description of system: .....

**Figure 4-5 Template for the projects analysis**



Points of Contact	
System title	
System abbreviation	
Project contact person	Company / Organisation / Institute: Name: Tel: Fax: E-Mail: Address:
Relationship to system	<input type="checkbox"/> Developer <input type="checkbox"/> Manufacturer <input type="checkbox"/> Integrator <input type="checkbox"/> Distributor <input type="checkbox"/> User
Webpage	
Background Information	
System customers category	<input type="checkbox"/> Fire Brigades <input type="checkbox"/> Police <input type="checkbox"/> Ambulances <input type="checkbox"/> Military <input type="checkbox"/> Others: .....
Examples of typical European, national , regional, local users	<input type="checkbox"/> Europe: ..... <input type="checkbox"/> National: ..... <input type="checkbox"/> Regional: ..... <input type="checkbox"/> Local: .....
Geographical distribution of the systems used today, number of systems used within that region, and number of user equipment / user interfaces. 13	<input type="checkbox"/> Europe: Number of systems used: ..... Number of user equipment / user interfaces used: ..... <input type="checkbox"/> National: Number of systems used: ..... Number of user equipment / user interfaces used: ..... <input type="checkbox"/> Regional: Number of systems used: ..... Number of user equipment / user interfaces used: ..... <input type="checkbox"/> Local: Number of systems used: ..... Number of user equipment / user interfaces used: .....
Type of end user equipment / user interface	<input type="checkbox"/> Installed on a fix position (i.e. control centre,...) <input type="checkbox"/> Mobile: <input type="checkbox"/> vehicles (cars, ships, trains): ..... <input type="checkbox"/> pedestrian users <input type="checkbox"/> others: .....
Functionalities	
Key functionalities of the system	
Type of transport	<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ship <input type="checkbox"/> Others: .....
Type of dangerous goods	
System description	
Benefits derived from system	

<sup>13</sup> For example a fleet management system is used by 4 transport companies at national level and each company has 10 vehicles equipped:

National:

Number of systems used: 4

Number of user equipment / user interfaces used: 40



Objectives	
Type of situation covered by the system	<input type="checkbox"/> Nominal Situation <input type="checkbox"/> Alert Situation <input type="checkbox"/> Crisis Situation
Type of operations covered by the system	<input type="checkbox"/> Monitoring and Control <input type="checkbox"/> Provision of Information related to transport and goods <input type="checkbox"/> Elaboration of regulations and Emergency Plans <input type="checkbox"/> Warnings reception and alerting <input type="checkbox"/> Starting up the Emergency Plan <input type="checkbox"/> Risk assessment <input type="checkbox"/> Monitoring of the different intervention teams <input type="checkbox"/> Traffic control <input type="checkbox"/> Rescue and Evacuation <input type="checkbox"/> Medical assistance <input type="checkbox"/> Initial emergency services (e.g. fire-fighting, first cleaning, ...) <input type="checkbox"/> Protection of people <input type="checkbox"/> Information to the population <input type="checkbox"/> Cleaning
GIS component	<input type="checkbox"/> No GIS included, if yes: why not: ..... <input type="checkbox"/> GIS integration planned, if yes: what are the key requirements: ..... <input type="checkbox"/> GIS included, if yes: what product and data: .....
Positioning component	<input type="checkbox"/> No positioning included, if yes: why not: ..... <input type="checkbox"/> Integration of positioning system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Positioning system included, if yes: brief description of system: .....
Communication component	<input type="checkbox"/> No communication required, if yes: why not: ..... <input type="checkbox"/> Use of communication system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Communication system used, if yes: brief description of system: .....
Dangerous goods database	<input type="checkbox"/> No database required, if yes: why not: ..... <input type="checkbox"/> Use of database planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Database used, if yes: brief description of system: .....
Risk knowledge system	<input type="checkbox"/> No risk knowledge system required, if yes: why not: ..... <input type="checkbox"/> Use of risk knowledge system planned, if yes: what are the key requirements: ..... <input type="checkbox"/> Risk knowledge platform used, if yes: brief description of system: .....

**Figure 4-6 Template for the systems analysis**



Points of Contact	
Regulation/Standard name	
Regulation abbreviation	
Regulation/Standard Description	
Source of information	
Contact person/organization	Company / Organisation / Institute/ Agency : Name: Tel: Fax: E-Mail: Address:
Web Information	
Relationship to system	<input type="checkbox"/> Developer <input type="checkbox"/> Manufacturer <input type="checkbox"/> Integrator <input type="checkbox"/> Distributor <input type="checkbox"/> User
Background Information	
Geographical Scope	<input type="checkbox"/> European <input type="checkbox"/> National <input type="checkbox"/> Regional <input type="checkbox"/> Local
Status <sup>14</sup>	
Stage Regulation/Standard Date <sup>15</sup>	
Under the rule <sup>16</sup> ...	
Available public documentation	
Foreseen/planned modifications on the standards and regulations	
Applicability of the modifications	
Participation to Regulation clusters <sup>17</sup>	<input type="checkbox"/> No <input type="checkbox"/> Yes, if yes: name of the cluster (if applicable), projects involved, and objectives of co-operation: .....
Objectives	
Type of transport	<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ship <input type="checkbox"/> Others: .....
Type of dangerous goods	
Functionalities	
Key functionalities of the regulation	
Regulation description	
Benefits derived from regulation	
Objectives	

<sup>14</sup> This will be asked to know if the standard or the regulation has been published or is still under development

<sup>15</sup> Date after which the standard or the regulation has been/ is / will be applicable.

<sup>16</sup> Under which rule the regulation has been approved (For example, for the Spanish regulations: Decreto/Real Decreto....).

<sup>17</sup> The term "cluster" refers to any exchange or co-operation with other projects (various) on a regularly basis.

Type of situation covered by the regulation	<input type="checkbox"/> Nominal Situation <input type="checkbox"/> Alert Situation <input type="checkbox"/> Crisis Situation
Type of operations covered by the regulation	<input type="checkbox"/> Monitoring and Control <input type="checkbox"/> Provision of Information related to transport and goods <input type="checkbox"/> Elaboration of regulations and Emergency Plans <input type="checkbox"/> Warnings reception and alerting <input type="checkbox"/> Starting up the Emergency Plan <input type="checkbox"/> Risk assessment <input type="checkbox"/> Monitoring of the different intervention teams <input type="checkbox"/> Traffic control <input type="checkbox"/> Rescue and Evacuation <input type="checkbox"/> Medical assistance <input type="checkbox"/> Initial emergency services (e.g. fire-fighting, first cleaning, ...) <input type="checkbox"/> Protection of people <input type="checkbox"/> Information to the population <input type="checkbox"/> Cleaning

Figure 4-7 Template for the standards/regulations analysis

USER IDENTITY	
Name	
Organisation/Company/Institute	
Web Page	
Department/Division	
Position Held	
Responsibilities	
Address	
Country	
Office Telephone/Fax Number Mobile Phone Number Email	
Service/Role	According to the Users' Classification (TN111.1).
Expertise	<input type="checkbox"/> Train <input type="checkbox"/> Road <input type="checkbox"/> Both <input type="checkbox"/> Others.....
MITRA PARTNER DETAILS	
Name	Details of the MITRA partners which will carry out the interview.
Organisation	
Country	
DECISION MAKING PROCESS IDENTIFICATION AND DESCRIPTION	
User Role and Services within the MITRA scope	
1. Time Frame of operations related to a crisis situation: <input type="checkbox"/> Nominal Situation <input type="checkbox"/> Alert Situation <input type="checkbox"/> Crisis Situation	Space reserved for additional observations.



<p><b>2. User Role/Service identification:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Monitoring and Control</li> <li><input type="checkbox"/> Provision of Information related to transport and goods</li> <li><input type="checkbox"/> Technical services of transportation for dangerous goods.</li> <li><input type="checkbox"/> Elaboration of regulations and Emergency Plans</li> <li><input type="checkbox"/> Warnings reception and alerting</li> <li><input type="checkbox"/> Technical assistance</li> <li><input type="checkbox"/> Starting up the Emergency Plan</li> <li><input type="checkbox"/> Risk assessment</li> <li><input type="checkbox"/> Monitoring of the different intervention teams</li> <li><input type="checkbox"/> Traffic control (road and rail)</li> <li><input type="checkbox"/> Rescue and Evacuation</li> <li><input type="checkbox"/> Medical assistance</li> <li><input type="checkbox"/> Initial emergency services (e.g. fire-fighting, first cleaning,...)</li> <li><input type="checkbox"/> Protection of people</li> <li><input type="checkbox"/> Information to the population</li> <li><input type="checkbox"/> Cleaning</li> </ul>	<p>Space reserved for additional observations.</p>
<b>Decision/Making, Activities and Operational Procedures</b>	
<p><b>3. Main Activities and Objectives:</b></p>	
<p>ACTIVITIES:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<p>OBJECTIVES:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>
<b>Information needed and provided</b>	
<p><b>4. Information and data needed:</b></p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>5. Information and data provided:</b></p> <p>Please, specify the information that you provide to other actors when carrying out the above mentioned activities, and specify the actors that receive that information.</p>	<p><i>Space reserved for additional observations.</i></p>
<b>DECISION MAKING SUPPORT</b>	
<p><b>6. Decision Making Support:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>	<p><i>Space reserved for additional observations.:</i></p>
<p><b>7. Means needed:</b></p> <p><i>If the previous answer is yes, could you please list the means needed and for which activities or decisions are they used?. You must use the previously listed activities and decisions.</i></p> <p><i>If the previous answer if no, could you please explain why not and how is it planned?</i></p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>8. Support Utilisation:</b></p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>9. Decision Making Process Automation</b></p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>10. Need for MITRA support tool:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> It may help</li> <li><input type="checkbox"/> No</li> </ul>	<p><i>Space reserved for additional observations.</i></p>
<b>RELEVANCE OF THE MITRA SERVICES FOR THE USERS ACTIVITIES AND DECISIONS</b>	
<b>Services in Nominal and Alert Situations: Real-time Knowledge</b>	



<p><b>11. Presentation of Current Position and Route of the vehicle (truck and train):</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects this information should include (e.g. origin, destination, road network, rail track and Km of the current position, intermediate stops...):</i></p> <p>_____</p> <p><i>In case of rail transport, do you think it should be presented additional information? i.e: position of the wagon transporting dangerous goods.</i></p> <p>_____</p>	<p><i>Who should provide this information?:</i></p> <p><input type="checkbox"/> Transporter  <input type="checkbox"/> Driver/engine driver  <input type="checkbox"/> Goods Dispatcher  <input type="checkbox"/> Other:</p> <p><i>How should this information be introduced into the system?:</i></p> <p><input type="checkbox"/> Manually  <input type="checkbox"/> Automatically  <input type="checkbox"/> Other:</p> <p>Do you foresee any difficulties in this process? Which?:</p> <p>_____</p> <p><i>What <b>precision, integrity, security and availability</b><sup>18</sup> do you think that will be enough according to the system objectives (order of magnitude; meters, kilometres, ...):</i></p> <p>_____</p>
<p><b>12. Identification characteristics and status of the cargo:</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects this information should include (e.g. Product ID, Amount, Status,...):</i></p> <p>_____</p>	<p><i>Who should provide this information?:</i></p> <p><input type="checkbox"/> Transporter  <input type="checkbox"/> Driver/engine driver  <input type="checkbox"/> Goods Dispatcher  <input type="checkbox"/> Other:</p> <p><i>How should this information be introduced into the system?:</i></p> <p><input type="checkbox"/> Manually  <input type="checkbox"/> Automatically  <input type="checkbox"/> Other:</p> <p>Do you foresee any difficulties in this process? Which?:</p> <p>_____</p> <p><i>additional observations:</i></p> <p>_____</p>
<p><b>13. Presentation of Potential Risks and hazards represented by the vehicle (truck and train) and the goods transported:</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects this information should include (e.g. Type of risk, risk estimation, affected area,...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p> <p>_____</p>
<p><b>14. Presentation of lessons learnt form past and required particular precautions:</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects this information should include:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p> <p>_____</p>
<p align="center"><b>Service and Functions in Nominal and Alert Situations: Surrounding of the location of the vehicle (truck and train)</b></p>	

<sup>18</sup> See definition in §2.2/page 11



<p><b>15. Occurrence of an extraordinary event (e.g. shows, manifestations or content):</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects this information should include(co-ordinates, type of event,...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>16. Geographical and physical characteristics of the areas crossed by the vehicle (truck and train):</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>17. Weather forecast:</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>18. Large human concentrations and populations living in these areas:</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have (location, size of population,...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>19. Constraints of the everyday life (opening hours of schools, schedule of buses, etc.):</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>20. Presence of social structures (hospitals, schools, stadiums, etc.):</b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have (location, ...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>



<p><b>21. <u>Presence of other vehicles (trucks and trains) transporting dangerous goods in the vicinity:</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have ((location, information on the goods,...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>22. <u>Alert Situations:</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>23. <u>Other Functions/Services:</u></b></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>Service and Functions in Crisis Situations</b></p>	
<p><b>24. <u>Warning Triggering and Confirmation of Crisis:</u></b></p> <p><i>How do you think that a warning of crisis should be triggered:</i></p> <p><input type="checkbox"/> Manually (by phone, emergency call,...)  <input type="checkbox"/> Automatically by the system  <input type="checkbox"/> Both</p> <p><i>In case you have answered <b>Manually</b> or both, who should trigger the alarm?, and in what cases? (e.g.: The driver/engine driver, the operator of the Regional Centre, a third part,...):</i></p> <p>_____</p> <p><i>In case you have answered <b>Automatically</b> or both, could you propose any kind of system or automatic process reliable enough to be used for this purpose? It could be differences between road and rail transportation?:</i></p> <p>_____</p>	<p><i>Please list what information the warning should include:</i></p> <p>_____</p> <p><i>Do you need to be informed by the warning by the system?:</i></p> <p>_____</p> <p><i>Could you specify what process should be selected for confirming a warning and establish a crisis situation:</i></p> <p>_____</p> <p><i>Is there any risk that should be avoided when displayed a warning of crisis (e.g.: false warnings,...):</i></p> <p>_____</p>
<p><b>25. <u>Last known position of the vehicle (truck and train):</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>26. <u>Precise identification of the cargo:</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>



Project: MITRA - FP6 - STREP (511361)  
 Title: D1.1b MITRA User requirements  
 Ref: MITRA/User Requirements/ISDEFE/D1.1b/V4.0  
 Version: 4.0  
 Date: 31/01/2006

<p><b>27. <u>Intervention procedures applicable to this cargo:</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>28. <u>Indication of specific precautions suited to the type of accident:</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	
<p><b>29. <u>Estimation of risks and consequences (explosion, fire, etc.):</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>30. <u>Estimation of the impact on the surroundings (Zones affected by the dispersion of the pollutants, Perimeters of security, etc.):</u></b></p> <p><input type="checkbox"/> Yes, absolutely needed  <input type="checkbox"/> It may help  <input type="checkbox"/> No, it is not needed</p> <p><i>If so, please which activities are affected by this information:</i></p> <p>_____</p> <p><i>Please list which aspects or format this information should have:</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>31. <u>Additional Information:</u></b></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<b>ADDITIONAL USER NEEDS</b>	
<b>Needs related to the Process to be established in the MITRA Scenario of Operations</b>	



<p><b>32. <u>Communication Process during a crisis situation between Regional Centres:</u></b></p> <p><i>In case that a crisis situation may affect a geographical region belonging to more than one regional centre, how do you propose that the communication and co-ordination should be made between centers? (by telephone, automatically, by using the MITRA system,...):</i></p> <p>_____</p> <p><i>In case that during crisis situation a Regional Centre needs support from other regions, how do you think co-ordination should be made? (by telephone, automatically, by using the MITRA system,...):</i></p> <p>_____</p>	<p><i>Space reserved for additional observations.</i></p>
<p><b>33. <u>Geographical Scope of the Information displayed :</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Only the controlled geographical region</li> <li><input type="checkbox"/> Controlled Region + zones close to the boundaries</li> <li><input type="checkbox"/> Controlled region + adjacent regions</li> <li><input type="checkbox"/> All Europe</li> </ul>	<p><i>Space reserved for additional observations.</i></p>
<p><b>34. <u>Type of HMI that will be used:</u></b></p> <p><i>Please list and describe all those aspects and requirements that are needed when designing the HMI: (e.g.: Standards, Number of windows, need of keyboard, mouse,...,colors, a single screen or one for crisis and one for nominal monitoring, etc.):</i></p> <p>_____</p>	<p><i>Please list and describe all those additional aspects and requirements that should be taken into account when designing the HMI: (e.g.: Standards, Number of windows, need of keyboard, mouse,...,colors, a single screen or one for crisis and one for nominal monitoring, etc.):</i></p> <p>_____</p>

**Figure 4-8 Questionnaire for Users**

#### 4.3.2.2 A1.4: Analysis of related systems, projects and regulations/standards to MITRA

The objective of this activity is to obtain a preliminary list of requirements from the following sources:

- European Regulations
- European Standards
- Projects (with similar objectives to MITRA)
- Systems (with similar objectives to MITRA)

The inputs to meet within this objective have been:

- TN112.1: Survey template.
- TN113.1: List of related systems, projects and regulations/standards to MITRA.

The output of this activity is the following internal deliverable:

- TN114.1: User requirements from systems, projects and regulations/standards to MITRA.

TN114.1 provides the list of requirements elicited after analysing the information gathered from systems, projects and regulations/standards that have fed A1.6 and A1.8. Next table shows the projects, systems, regulations and standards that have been considered in the user requirements elicitation phase.

		FRANCE	GERMANY	SPAIN	EUROPE	INTERNATIONAL
PROJECTS		GLOBAL SINERGI GISPC	Lagebild Gefahrgut 2002 Informationssysteme der chemischen Sicherheitstechnik GRAL		KOVERS EMOGES EuroRoads ETIS EurogialMap GINIE	
SYSTEMS	Fleet Management		Tdwebview WEBfleet Fleet server Cargo fleet Liquifleet	ARTIS		
	Database	TRANSAID CASU CEDRE	TUIS MEDITOX deNIS Database Gefahrgut GSBL GSA	MHIDAS	CITRA PORTICO FRAME MITHOS CHEMDATA Database ERICards	
REGULATIONS				Real Decreto 387/1996 Real Decreto 3/2001	RID ADR CRTD UNRED	
STANDARDS					INSPIRE	ISO 19107 ISO 1925 ISO 19115 ISO 19116 ISO 19128

Figure 4-9 Systems, projects, regulations and standards considered

#### 4.3.2.3 A1.5: Interviews

The objective of this activity has been to obtain a preliminary list of requirements from a selected set of users. The inputs used are listed below:

- TN112.2: Users questionnaire
- TN111.1: Report on user identification and classification
- TN111.2: MITRA Users Contact Directory

The output of this activity has been the following internal deliverable:

- TN115.1: MITRA preliminary user requirements from users.

This document has provided the list of requirements elicited from users` interviews that has fed A1.6 and A1.8.

Next table contains the list of users that have participated in the interviews. Most of these interviews have been personal interviews and when necessary have been made by telephone or e-mail.

Name	Company/Organisation	Country	E-mail
Mr. Jesus Perez Lopez	ITENE (Elaboration of emergency plans)	Spain	jperezlopex@itene.com
Ms. Paloma Iribas	Ministerio de Fomento Español	Spain	piribas@mfom.es
Mr. Rafael Abajo	CEPSA	Spain	rafael.abajo@madrid.cepsa.es
Quiroga, Javier	Madrid SAMUR (Medical Services)	Spain	quirogamfj@munimadrid.es
Mr. Federico Fernandez	DGT (General direction of traffic) Warning reception and Alerting, Traffic control, Information to the population	Spain	federico.fernandez@dgt.es
Mr. Jose Luis Sanz	Madrid Fire Brigade	Spain	jlsanz@munimadrid.es
Mr. Jesus Soriano	FEIQUE (Spanish Federation of Chemical Industry)	Spain	jsm@feique.org
Mr. Helmut Heckner	EBA	Germany	hecknerh@eba.bund.de
Mr. Michael Huth	Hulocon GmbH	Germany	huth@hulocon.de
Mr. Ingo Berger	Ministry of the interior Schleswig Holstein	Germany	Ingo.berger@mi.landsh.de
Mr. Lothar Gomoll	Ministry of the interior Mecklenburg-Vorpommern	Germany	lothar.gomoll@im.mv-regierung.de
Mr. Wolfgang Mache	Ministry of the interior Berlin, ZVKD – Central Traffic Service	Germany	Zvkd-sond@berlin.polizei.de
Dr. Heike Speckmann	Fire Brigade Duisburg	Germany	Heike.speckmann@stadt-duisburg.de

**Figure 4-10 Users interviewed**

#### 4.3.2.4 A1.6: MITRA baseline scenario

Using as inputs the preliminary list of requirements in A1.4 and A1.5, a baseline scenario showing the services provided by the MITRA system was elaborated. The main objective of this scenario has been to serve as a reference point to start discussion with users about MITRA system during the 1<sup>st</sup> MITRA Workshop.

MITRA baseline scenario represents the system in a step-by-step situation of two cases:

- Monitoring/alert
- Crisis Management

This work has been included in the following document:

- TN117.1: MITRA Baseline Scenario

#### 4.3.2.5 A1.7: Preparation of 1st MITRA Workshop

The objective of this activity has been to define all the information to be needed for the participants to the 1<sup>st</sup> MITRA Workshop. This information has been included in the following internal deliverable:

- TN117.1: MITRA 1<sup>st</sup> Workshop Handbook

TN117.1 clearly states the main objectives, invited participants, agenda, and relevant logistical information.

#### 4.3.2.6 A1.8: MITRA 1st Workshop

MITRA 1<sup>st</sup> Workshop was held the 18-19 of January 2005 in Isdefe's HQ in Madrid. The overall purpose of the 1<sup>st</sup> MITRA Workshop was twofold:

- To obtain a list of user requirements for the MITRA system validated by the users.
- To obtain the criteria to prioritize the requirements in the analysis phase.

Next table shows the list of participants, their expertise and nationality:

Organisation	Expertise	Country
Feuerwehr Duisburg	Municipal fire-brigade	Germany
Bavarian Ministry of Interior Polizeidirektion Traunstein	Police department	Germany
Ministerio de Fomento Espanol	Spanish Ministry of Transports	Spain
METATTM. DTT/DSCR.	French Ministry of Transports - Direction Générale des Transports Terrestres	France
Civil Protection (Castilla y León region)	Civil Protection	Spain
CEPSA	Distribution of diesel and fuel company	Spain
Generalitat de Catalunya (autonomous government of Catalunya)	Elaboration of regulations and emergency plans	Spain
Gerencia de Emergencias - SAMUR	Medical assistance	Spain
BMVBW – Department A22 “Transport of Dangerous Goods”	German Federal Ministry of Transport, Building, Housing	Germany
Gerencia de Emergencias - Fire Brigade Madrid	Rescue and evacuation, emergency plan	Spain
Guardia Civil		Spain
FEIQUE	Spanish Federation of Chemical Industry	Spain
Deutsche Bahn AG	German Railways	Germany

Figure 4-11 1<sup>st</sup> MITRA Workshop participants

All the discussions and conclusions occurred during the workshop have been documented in the following deliverable:

- D1.1a MITRA 1st Workshop Conclusions Report

#### 4.3.3 STEP 3: User Requirements analysis

The objective of this step has been to analyse the set of requirements validated by the users during the 1st MITRA Workshop.

#### **4.3.3.1 A1.9: Analysis of User Requirement**

The process to define a set of system requirements for the definition of the MITRA system specification have started with the analysis of the set of user requirements validated by the users during the 1<sup>st</sup> MITRA Workshop. This analysis has been performed ensuring that each requirement possesses the following properties:

1. Abstract: Each requirement should be implementation independent
2. Unambiguous: Each requirement should be stated in such way so that it can be interpreted in only one way.
3. Traceable: For each requirement it should be feasible to determine a relationship between specific documented customer statement(s) of need and the specific statements in the definition of the system given in the System requirements Specification as evidence of the source of the requirement
4. Validatable: Each Requirement should have the means to prove that the system satisfies the requirements.

After the application of the criteria mentioned above a consolidated list of requirements has been elaborated, this list is contained in the next deliverable:

- D1.1b MITRA User Requirements

#### **4.3.4 STEP 4: User Requirements review**

During the different reviews of the project and the validation campaign is possible to get more inputs from users about the system. In order to include this feedback in the list of requirements it is foreseen to deliver updated versions of D1.1b.

##### **4.3.4.1 A1.10: Requirements review**

The objective of this activity is to update D1.1b with any new feedback from users obtained during the different planned project reviews, Steering Committees, and field trials. This task allows the inclusion of users' feedback in the different phases of the system design.

The output of this activity is:

- Updates of D1.1b MITRA User Requirements