

MITRA

Monitoring and Intervention for the TRansportation of Dangerous Goods



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Relevant Topics:

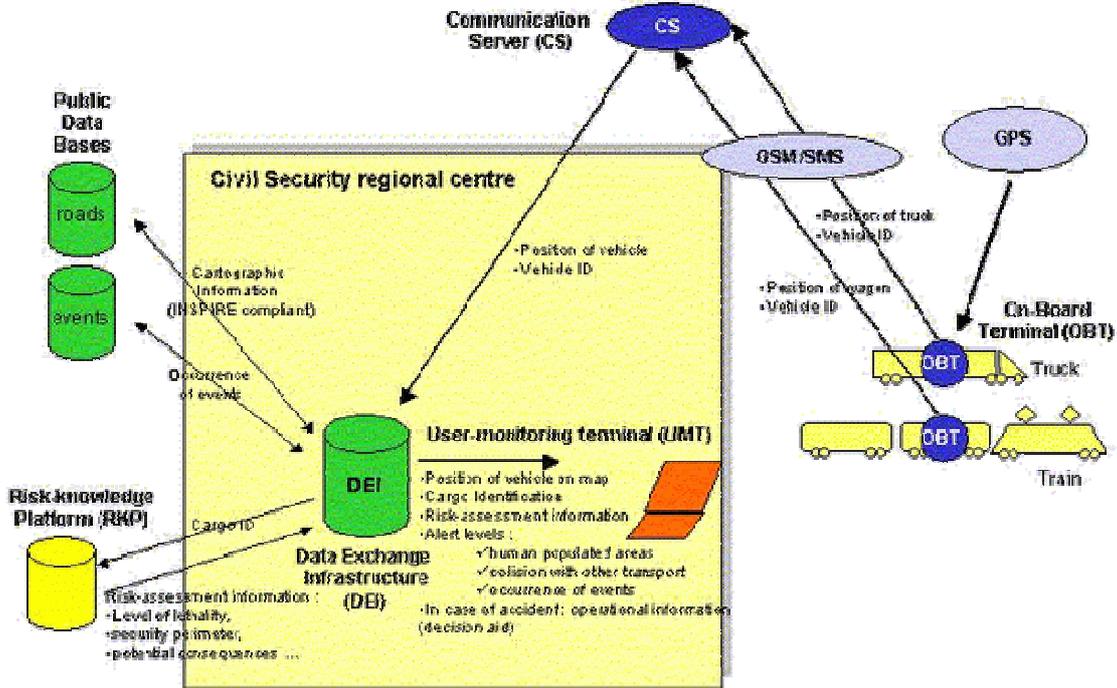
- Integration with communication systems (e.g. SatCom, UMTS)
- Integration with GeoInfo Systems (GIS)
- Multi-modal transport and personal mobility applications

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The key objective of the MITRA project is to develop and test a functional demonstrator for the monitoring of dangerous goods, destined to support European Civil Security Centres for crisis management in case of accidents. The MITRA demonstrator will provide the Civil Security Centers with a real-time knowledge of the position of the vehicles and information on the freight circulating in their responsibility area. Further, the system will generate warning and alert displays in case of dangerous situations, and will provide information required for crisis management operations in case of accidents. Such a system will support intervention teams to react immediately in case of distress with maximum efficiency and safety. Several French, German and Spanish project partners with expertise in the domains of transport of dangerous goods, risk prevention and crisis management, satellite positioning and Geographic Information Systems (GIS) have joined the MITRA project to meet these objectives. The Civil Security authorities from Spain, France, Germany and the Netherlands are actively involved in the project, as experts for the user requirements collection and as end-users for the system deployment and validation campaign.

MITRA is funded by the European Commission under the 6th Framework Programme (IST priority). It started on 1 September 2004 and the project duration is 24 months. The MITRA consortium involves different European actors like Civil Security authorities, research organisations, and industrial companies.

The following figure shows an overview of the MITRA architecture.



The position information derived from the MITRA On-Board Terminal (OBT) will be transmitted (together with the vehicle ID) using GSM/SMS via the MITRA Communication Server (CS) to the Data Exchange Infrastructure (DEI). The DEI has interfaces to the MITRA Public Data Bases (containing various spatial information, based on the INSPIRE standard as far as possible) and the MITRA Risk-Knowledgement Platform (RKP). The integration of those two components of the MITRA demonstrator into a standard GIS will enable the operator in the regional Civil

Security Centre to monitor the floating vehicles, identify dangerous situations, and react properly in case of accidents.

The visualisation of the mobile vehicles, the geographic environment and specific information related to the transport of dangerous goods will be based on 2D and 3D GIS tools. Typical examples are shown in the following figures.



In order to validate the MITRA system against the user requirements identified in the very first phase of the project, field tests will be organised in Germany (road and rail) and in the border area between Spain and France (road). Three regional Civil Security Centres (Spain, France, Germany) will be involved in these field tests. The test scenario in Germany will focus on the usability of the MITRA system for different modes of transport (road and rail) and to assess the quality of the position information and the communication link in different environments (urban, sub-urban, rural, and mountainous). The MITRA functional demonstrator will be based on GPS, but additional measurements will be performed to assess the benefits of EGNOS and Galileo for a future operational system. The trials in the French / Spanish border region will focus on the hand-over of a vehicle between the control centre in Barcelona and the control centre in Valabre (near Aix-en Provence).