emotion

Europe-wide multimodal traffic information service

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eMOTION

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OVERVIEW & OBJECTIVES

eMOTION aimed at defining an **integrated framework for the creation, use and diffusion of real time information services on Europe-wide multimodal traffic**, highlighting legal, organizational and business aspects related to the information integration process and defining a **distributed reference architecture based on shared international data standards**.

The provision of geo-referenced data and information was based on the specifications of the **Open Geospatial Consortium (OGC)** including support for **Location Based Services (LBS)**. Compliant to the OGC specifications, the eMOTION information system used service metadata managed and searched using a catalogue service as for dataset metadata.

eMOTION services

real-time traffic information to road and public transport users

dynamic and multimodal routing

additional travel-related services (e.g. tourist information via on-trip-devices or in-car-systems)

SERVICES

The range of services comprised **real time traffic information for road traffic and public transport**, **dynamic (and multimodal) routing services and special services like reservation of parking space**, **booking of personalized public transport services** (e.g. Demand Responsive Transport) as well as additional travel-related services such as tourist information or hotel reservation.

Policies and scenarios for a Europe-wide information service were investigated and developed that integrate different types of partners like content providers, service operators, service providers etc. from different transport modes (road, rail etc.) with different legal status, public and commercial partners, from countries all over Europe.

The policies and scenarios covered legal aspects as well as implementation policies and data safety policies and meet in an organizational and legal framework for the service architecture.

APPROACH

The project approach basically rested upon **two conceptual pillars**:

- **organizational, legal and economic issues**: policies and scenarios for a Europe-wide traffic information service were developed that integrated different types of public and commercial partners like content providers, service operators, service providers etc. from different modes of transport (road, rail etc.) with different legal status from countries all over Europe

- **technical issues**: the service architecture was designed – including applicable standards and their integration – and the deployment stratedy was defined – including extensive validation and assessment of the service range and of acceptance indicators

ARCHITECTURE

To ensure Europe-wide access and data communication between partners with different sub-systems in different countries, the eMOTION system approach is based on common standards in the area of data communication and data protocols.

For data retrieval in a specific language, standardized user interfaces with defined text modules were applied, whereas to enable the provision of location-based services the devices had to use appropriate means for positioning.
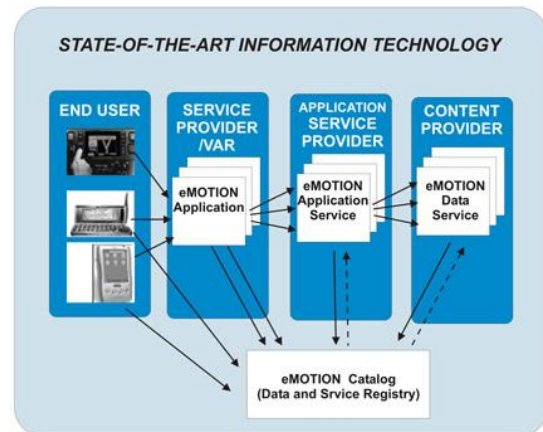
USE CASE

A traveller is looking for real-time traffic information: he has a device able to determine its location and connect to the service provider and he starts an eMOTION application (installed on the device or running on a remote server provided by an **eMOTION Service Provider**). He can find relevant services to his route or mode-of-travel using the **eMOTION Catalogue User Interface** using **thematic (modes-of-transport, special requirements etc.) or spatial parameters (location, destination etc.)**.

The invoked application determines the location of the traveller (automatically or interactively) and in addition ask for additional input by the traveller to determine his information need. The application accesses the **eMOTION Catalogue** (or other registries) to find application and/or services that meet the needs of the traveller. The catalogue contains all information to carry-out this task.

Standardized application schemas (for traffic information, road works, public transit schedules etc.) and service taxonomies allow for efficient searches.

Based on the findings of the searches and input provided by the traveller, the application executes service requests to eMOTION Application Services, Data Services and/or other services, e.g. for a topographic map in the background.

After processing and integrating the different input streams, the traveller receives the requested traffic information, that may be updated periodically or in case of changes.