Centrico BRIEFING NOTE

Using ITS to manage Europe´s busiest roads

MeteoTrans

SUMMARY

The exact knowledge about the weather conditions on the roads is essential for proper winter maintenance. The ***MeteoTrans*** study analyses the options for a common working of *Centrico* partners in these fields.
A first step will be the cross-border access to the neighbouring street weather information system. In future a common standard on the *DATEX II* platform should be implemented for the exchange of road weather data.

Background

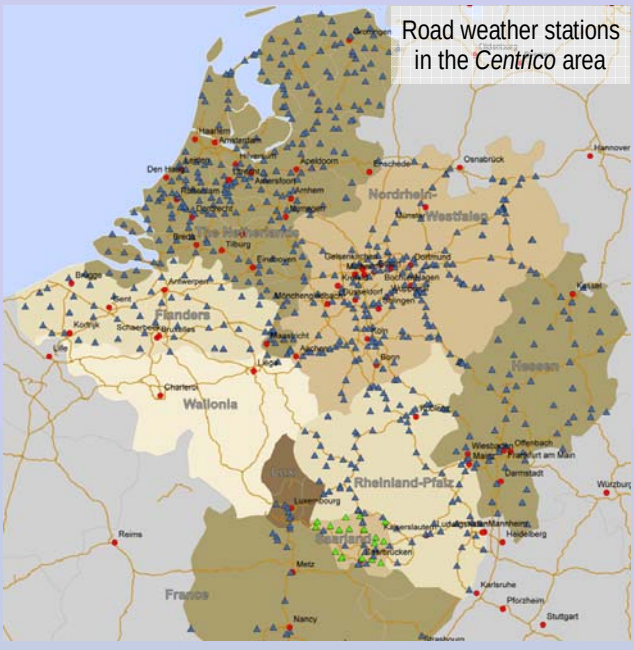
The road authorities and their maintenance departments are taking care about road's safety even on bad weather conditions. Pushing the winter maintenance trucks on time is essential to avoid crashes on wintry roads and the collapse of the traffic flow. For that reason the road authorities have implemented a close network of measuring stations for the detection of weather parameters. In cooperation with weather agencies the winter maintenance services have a detailed view about the current situation on the roads and the expected weather in the next hours and days.

However, weather conditions will not stop at borders. Even in the north-western Europe weather conditions are predominant affected by streams coming from the Atlantic and the North Sea. But unfortunately there is recently no option for the exchange of data and information between the authorities. The winter maintenance services are mostly blind until the first stations on their territory have data about bad weather conditions.

Saarland therefore has taken the lead for the preparation of a feasibility study in the context of the Euroregional programme *Centrico*. The feasibility study, called ***MeteoTrans***, is dealing with the exchange of traffic-related weather data in the European context.

Status Quo Analysis

The road authorities of Belgium, Germany, Luxembourg, Northern France and the Netherlands have a close network of weather detection stations along their roads. All of them are collecting data of these stations in central systems. These systems as well as the user interfaces mainly are based on web technologies. The road weather information systems of the Belgium regions, Germany *(SWIS)* and the Netherlands offer access via the Internet. Open interfaces are recently not provided for the data exchange, but all systems have special gateways for the data exchange with weather agencies.



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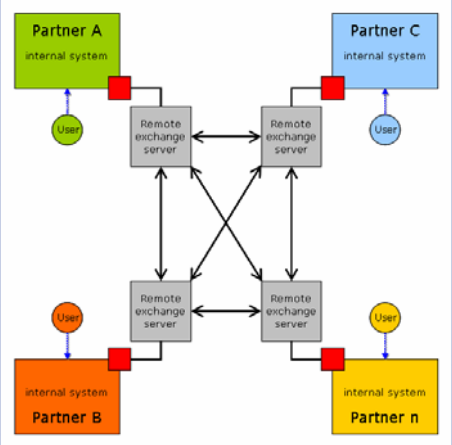
Solutions

Result of the status quo analysis is the general feasibility of the ***MeteoTrans*** idea in case of technical and organisational aspects. The solutions vary among the organisational arrangement of the technical modules. The systems are differing between with central components and systems, who mainly work with remote modules. Systems with central components are represented by solutions, which use a main communication server for storage and distribution of different sources or offer a common Internet gateway to the data.

Meanwhile the trend puts focus on solutions with spread responsibilities. Remote operated systems prefer communication by using standard protocols. *DATEX* represents the current development of data exchange for transport issues in Europe. *DATEX II* already implements a lot of weather related features and is open to integrate further requirements. Interfaces between the systems of data origin and *DATEX* are additionally required. The offered data should be transferred from the source systems to a remote exchange server. Accepted partners have access to the servers and their information and could transfer the data to their own systems.



In general the road authorities will allow the provision of their weather data, if these data are used non-commercial and are not forwarded to third parties. In discussion is the forwarding to cooperating weather agencies of each partner. They have to assure to use the data for the optimisation of the winter maintenance related weather forecast only.

In addition to the general types for a cross-border data exchange the *Google Earth* ™ map service could be a further option for displaying road weather stations' parameters. *Google Earth* ™ allows to show the locations of road weather stations combined with a link to their measurement data. What's needed is a file for each partner, containing the geo coordinates of the weather stations and the control of the links to the data base. The required data should be offered on a web server, which is linked to the source data.

Beside these technical solutions the direct access to the neighbouring systems is the easiest way for a first step. Most systems allow access via Internet. After the exchange of access regulations this gateway could be used already in the winter period 2007/2008. Due to the fact that the user interfaces are provided in the nation's native language only, foreign users should have a brief manual in English language and a translation list of the most frequent words of the program.

Results

The partners, involved in ***MeteoTrans***, are in favour of the cross-border exchange of their road weather data. On the one hand the technical affords are manageable and on the other hand the organisational and legal aspects seems to be solvable, too. Beyond this the partners recommend to produce quick win results. Therefore they prefer an implementation of a cross-border exchange in phases.

- The arrangements about the Internet access to the neighbouring systems are **phase 1**.
- In **phase 2** the partners will create *Google Earth* ™ kml-files about their road weather stations and offer the needed data on web servers. The information about the road weather will be available on the *Google Earth* ™ platform for all partners.
- **Phase 3** describes the implementation of a common exchange standard. This probably will be *DATEX II*. In that reason the weather related chapters in *DATEX II* have to be extended for the needs of the winter maintenance services.

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