CURRENT TRENDS OF REAL-TIME MULTIMODAL INFORMATION SERVICES

Patrick GENDRE, CETE Méditerranée, France
Georges GALLAIS, VULOG
Laurence RISTORI, Communauté d’Agglo Sophia-Antipolis
Alan BOUEDEC, MHC Conseil
Bernard SENACH, Brigitte TROUSSE, INRIA / AXIS
Summary

I. Introduction

Very brief state of the art
Availability of several types of info

II. A focus on 4 key issues

1. Travel time and Perturbations
2. Ease of use (man machine interface of personalised, mobile and location-based services)
3. User participation
4. Providing a global view on the transport offer

III. Conclusion and perspectives
I. Introduction

The **TICTAC project** : www.projetttictac.org a research projet supported by the French PREDIT programme:

Design, develop and evaluate a real time info service for commuters of the Sophia Antipolis business area, 2010-2012.

State of the art (deliverable) : **current trends of (urban mobility) Real-Time MultiModal Information Services (RTMMIS) produced in June 2010**

Focussed on what to improve in the information service (not so much on how to do it : technical, marketing, management or other issues). No screenshots, no demos…

Updated via several **sources** such as www.predim.org (FR), In-Time, Opti-Trans(EU), TransitWire, TC newsletter (USA)
A very brief state of the art...

After years of R&D, deployment of RT MM Info Systems is becoming a reality and the ‘landscape’ is evolving quickly (even in France!)

Depending on the city/region, available data include:

- Reference (static) PT for several networks over a region
- Real-time traffic (TT, perturbations) and car park
- Real-Time PT (delays, perturbations)
- Recurring congestion on motorways

Possible improvements:
- Mode comparison
- (true) Gridlock detection
- Information accessibility (awareness, channels, multi-lingual, formats, handicapped persons…)

Consider several types of info (see next slide…): a good real-time service does not rely only on real-time data

A complete RT MMIS: the ‘holy grail’ of traveler info…
## Availability of several types of info

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice Tips</td>
<td>Not always</td>
<td>Fares Safety</td>
<td>yes</td>
<td>no</td>
<td>variable</td>
</tr>
<tr>
<td>Reference (static)</td>
<td>Yes</td>
<td>PT</td>
<td>PT</td>
<td>PT</td>
<td>PT+car</td>
</tr>
<tr>
<td>recurring / planned</td>
<td>variable</td>
<td>non</td>
<td>variable</td>
<td>more and more</td>
<td>Rare</td>
</tr>
<tr>
<td>Delays / T Times</td>
<td>PT, car, P</td>
<td>yes</td>
<td>Not always</td>
<td>more and more</td>
<td>No</td>
</tr>
<tr>
<td>Perturbations / events</td>
<td>often</td>
<td>By mode</td>
<td>more and more</td>
<td>more and more</td>
<td>partly</td>
</tr>
</tbody>
</table>
II. A focus on 4 key issues

-1- real time events and perturbations

-2- man machine interface of personalised, mobile and location-based services

-3- user participation

-4- providing a global view of the current transport offer
1. Travel time and Perturbations

**Travel time**: the key indicator but not easy to provide when parking is involved or if we want to predict future TT. **Recurring congestion** and incident occurrence stats based on historical TT variations and event logs is a solution.

Perturbation shall be handled depending on its importance. We propose the 4 following levels:

1. **at the line or road level**: information is in general controlled by the operators, who know what it is happening on “their” lines or roads. Main challenge: reduce cost so as to deploy everywhere.

2. **at the exchange or corridor level**: this implies organisation, at least for exchanging and providing information from multiple sources, and coordinated actions (traffic management plans).

3. **at the urban area or regional level**: information may concern all users (who can if needed ask for more personalised information). At this level, the information has to be selective and include only the more relevant events and advice. A dedicated structure has to be set up for doing the job.

4. **Crisis**: beyond a certain level of severity, event management becomes crisis management, is controlled by higher authorities (the ‘Préfet’, in France).
2. Ease of use

Personalisation and ergonomics: the pedestrian (and PT user) **navigator** is an active field of research (e.g. von Tür zu Tür in Germany, MIT PDA among others…): the context is mature for prototypes to get out of the labs and be deployed.

Location based services & applications in transport

Availability of information is improving

**Two challenges:**

**Comparing between modes** (car vs PT vs others, and between combination of modes): still ‘taboo’ in France

Provide a **global view on the transport offer**, the understandability and standardisation as we see the emergence (or ‘explosion’?) of new mobility services (ride sharing, on-demand transport, shared bikes, etc.)
3. User participation and web 2.0

- User involvement in service design (‘living labs’, ‘open innovation’) : a Good practice in Mobility Management too

- General ‘web 2.0’ trends : User feedback + Crowsourcing + Social networks + Application development (encourage reuse by 3rd parties)-> also true in transport info

This has to be managed as a technical project by the Transport authorities and operators, at several levels :
- user participation
- Open data (European directives context : Inspire, Public Data Reuse, ITS) : distinction to be made between reference and real time data, and reuse conditions (commercial or not…)
- Web services

Data and Web services standards : are emerging but no clear leader (in Europe, CEN standards – Datex, Netex - are gaining acceptance in the back-office but not for the front-end platforms)
4. Global view on the transport offer

Despite investment on alternative modes, congestion is still a problem.

A global RTMMIS cannot happen spontaneously: it has to be coordinated (traffic operations, mobility management, user info). Although the private sector can vastly contribute to improve and provide RTMM Information, this has to be strongly supported by the public sector.

**RTMMIS as a mobility management tool for transport authorities.** Many cities in Europe and elsewhere; (in France: Grenoble, Toulouse, Lyon, Paris, Montpellier, Nice, Nantes…)

Key success factors:
- shared data
- common tools (data platform, observatory, traffic management, web portal…)
- user participation
Conclusions and Perspectives

An RTMMIS project from the local authority should include:
- coordinated traffic management (link with the network operators)
- an easy-to-use user web/mobile portal with direct access to ‘basic info’:
  schedules, maps, journey planner, real time feeds and alerts
- an open data / web service access platform (more or less open depending on the data and intended use) for other services and apps
- using data for off-line studies and models

Important issues:
- data access and accessibility policy
- **invest on historical data**: measure recurring congestion, frequent perturbation, advice...
- invest on data standards and data quality
- improve comparison between modes and mode combinations
- **user participation** (feedback and contribution)

**Perspectives:**
- **sharing practices and issues in France, Europe and worldwide?**
- **develop standards and interoperability platforms?**
- Thanks for your attention!
- … and for your questions?

- Pat.Gendre@developpement-durable.gouv.fr
- All reports (in French) available at www.cete-aix.fr/tt13