

PhD thesis subject

Title : **Developpement and control of a city transport system for co-modal transportation of passengers**

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Today, the interest in preserving the environment through the reduction of greenhouse gas emissions and other air-pollutant is becoming increasingly important. In a first, a multi-modal policy of encouraging the use of different types of public transport was introduced. Since 2006, this policy has moved towards a co-modal policy that no longer opposes the car to public transport but encourages combination of all modes of transport without favoring the aim of optimizing the service.

Passing from competition to complementarity, transportation in general and transporting people in particular moving towards an efficient view that it is in the environmental context (the least polluting combination), the economic context (the lower cost) or just the most relevant combination with the situation.

In this context, the aim of this thesis is to design a co-modal transport system able to satisfy the user demands by providing co-modal routes optimized in terms of time, cost and emission of greenhouse gases while respecting their preferences and priorities. The work will be done jointly with Optymo,

<http://info.optymo.fr/>, the transport company of the city of Belfort. Optymo was a pioneer and innovative in the field of public transport and co-modality (bus, bike sharing, car sharing).

The designed system will facilitate the use of different transport modes on their own and in combination to obtain an optimal and sustainable utilisation of all available transport resources. In this way, the transport users will be able to identify and use direct or combined transport services most suited for their purpose. But for the system to achieve its objectives, it is necessary that the different transport modes can share as much information and can also communicate with them permanently. In fact, Transport service providers in all modes have to provide information about their service offerings and exchange information electronically with all relevant actors through planning, executing and completing transport operations. Also Transport infrastructure

providers have to be able to facilitate the best possible use of the complete transport infrastructure and support transport users by providing relevant information about the available transport infrastructure and how to use it

This research then seek to implement a vehicle management systemshared that covers all existing transport services such as public transport,carpooling, car sharing, the bicycles.

References :

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- **Feki Mohamed Firas** Optimisation distribuée pour la recherche des itinéraires multiopérateurs dans un réseau de transport co-modal: Thèse de doctorat de l'Ecole Centrale de Lille. -France , 2010.A21