

The modelling of sub-systems using ACTIF

This chapter only deals with the sub-systems relating to coordination between operators, the main objective of which is to optimise the use of existing roads through coordination and collaboration between the different operators. The needs expressed by the different partners are the following:

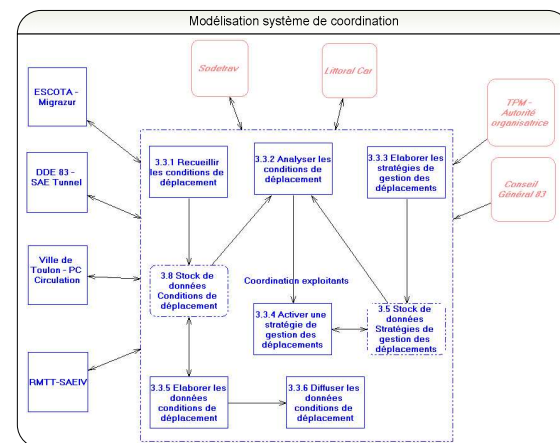
- ▶ Encourage motorists to use the tramway park and ride sites, by providing real time information,
- ▶ Obtain a better view of traffic conditions on neighbouring networks (roads managed by the Toulon local authority, national road network, tunnel managed by the MoT, secondary roads managed by the Var council, ESCOTA motorway network),
- ▶ Optimise the use of existing infrastructure,
- ▶ Implement a comprehensive and coherent transportation strategy.

The ACTIF model enabled the functions meeting these requirements to be identified:

- ▶ Collectively develop transportation management strategies,
- ▶ Activate a comprehensive strategy adapted to events
- ▶ Gather information on travel conditions in real time
- ▶ Forward information to all partners
- ▶ Issue order for assistance to predefined partners

This sub-system enables the acquisition of real-time data from different partners so as to be able to:

- ▶ Provide a comprehensive view of transportation throughout the entire network concerned
- ▶ Activate a comprehensive transportation strategy by issuing recommendations to road network operators on measures to be implemented.



Modelling of the coordination system using ACTIF

How ACTIF helped

This work highlighted the expectations of the various actors in terms of user information (real time information, improvement of dissemination means through the use of new technologies) and the need to improve coordination between public transport network operators and road operators on public

transport networks. The document that was produced presents an overall view of a programme involving the entire group of actors. It is available on the ACTIF web site.

Statement from Olivier CROUZIER – Toulon - Provence – Méditerranée Head of the Division for Transport Development and Multimodality - Department of Transport

“The ACTIF approach is highly useful in that provides a comprehensive approach and establishes relationships between the various elements (of the puzzle) of other actors' systems (urban and interurban transport operators, road and motorway operators, park and ride operators etc).

In the Toulon region (which is undoubtedly not the only one), it appeared essential to define a reference system and to implement an inter-operator coordination system. All aspects relating to multimodality call for a common reference system and coordination:

- ▶ travel information operating aid systems, with the dissemination of information to all collective transport, motorway radio stations, and even on-board information systems (TMC etc),
- ▶ reference multimodal information and real time information,
- ▶ communication media (3RP radio, Tetra or Wimax) split between the different local authorities and their respective competence,
- ▶ proposal for a multimodal electronic ticketing-electronic purse system with different groups of fares which include park and ride locations,
- ▶ integrated marketing of of different types of travel document.

We feel that it would be useful to follow up this initial definition stage with strategic assistance for the optimisation of data exchange between systems, bearing in mind that such systems are generally implemented one after the other, which subsequently leads to interface-related problems that are more difficult to deal with”.

Project : implementation of systems combining the coordination of transport operators and the provision of shared information to users.

Challenge : optimise the use of traffic lanes and encourage the use of public transport and environment-friendly modes.

How ACTIF helped: the use of the model and tools helped to highlight the different interfaces between partners

General context

Demographic growth associated with the dynamism of the Toulon area has led to peri-urbanization with major impact on local travel conditions. The urban area of Toulon is characterised by:

- ▶ its position between the sea and a mountain range
- ▶ regular demographic growth
- ▶ a large tourist population in the summer months

It is therefore essential to anticipate transportation needs. Within this domain, major policies for the Toulon area have already been defined in terms of infrastructure creation or the development of user services, for example:

- ▶ the creation of a tramway service planned for 2012
- ▶ the building of a second tunnel tube

In order to develop a comprehensive range of transport

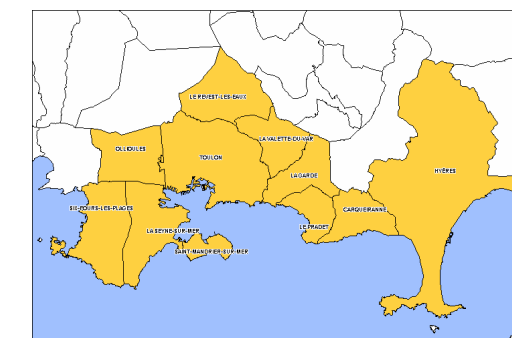
How ACTIF was involved

At the request of Toulon local authorities, a study was carried out using ACTIF, in order to:

- ▶ clearly define the project's scope (functional and geographic limits, the network concerned, the type of information targeted),
- ▶ realize a diagnosis of practices and existing systems
- ▶ clarify and re-express needs
- ▶ model different target system scenarios

Thanks to interviews with the various actors, the diagnosis study that was carried out early 2005, enabled the first levels of a functional and organizational architecture to be defined. This highlighted the need to implement a system enabling coordination between operators in order to facilitate transportation in the Toulon area and to encourage the use of collective transport.

services, which is beneficial to all and takes a step towards reducing pollution, it is essential to facilitate coordination between the various operators.



Toulon - Provence - Méditerranée Urban area

A project ?

The ACTIF team can provide help with your projects and pilot studies.

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Defining the project scope

The geographic scope of the diagnosis study is the Toulon metropolitan area which includes 11 towns (Toulon, Hyères, Carqueiranne, Le Pradet, La Garde, la Valette du Var, Le Revest les Eaux, Ollioules, Six Fours les Plages, La

Seyne sur Mer et Saint Mandrier sur Mer) and has the following characteristics:

- Population: 403,743
- Area: 36 400 hectares

Diagnosis of the current situation

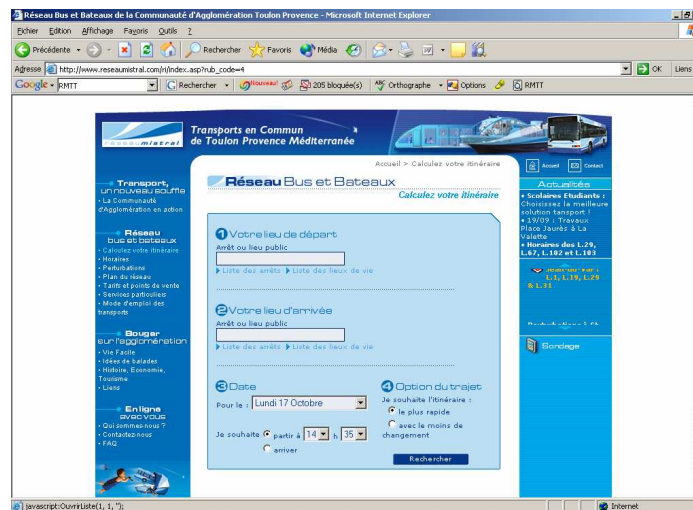
Public transport information

Multimodal pre-trip information is primarily provided to users by means of the MISTRAL network web site. This site includes information on all transport services available on the network and possible disruptions. It enables route computation between two stops/stations on the MISTRAL network. As for real time information, the Toulon transport authority (Régie Mixte des Transports Toulonnais) does not currently have an operating aid system that enables users to be informed of travel conditions in real time (early arrivals, delays etc).

Coordination between operators

The main road operators are the Toulon local authority, DDE du Var (local MoT office), the Var Council and ESCOTA (motorway company). Information exchange between these partners is limited and essentially carried out by phone or fax.

The extent to which the various partners are equipped with computer systems is variable and their systems are heterogeneous.



The needs and expectations of partners

Important modifications need to be made to transportation in the Toulon area, notably due to the following major projects:

- 2010: opening of the second tube of the tunnel which will enable the town of Toulon to be crossed from West to East.
- 2012: opening of a tramway line linking La Seyne and La Garde.

Both projects will entail considerable changes to travel habits within the Toulon area. Within the scope of the tramway project for example, park-and-ride sites will be created to encourage motorists to use public transport. The town's transportation plan will also be revised with the arrival of the tramway and the tunnel.

Generally speaking, all partners wish to make the most of

these projects by improving their coordination.

This requires ensuring that data exchange between operators is possible, but is also dependent on the will to inform users of travel conditions, either directly out on the field (via VMS, interactive travel information kiosks, local radio stations) or through other communication means such as mobile phones or the Internet.

With this in mind, the implementation of a Toulon area travel information operating aid system is planned for 2008, with the aim of improving public transport operations and providing users with quality real-time information.

This opportunity for improvement raises the issue of data exchange methods used by the various partners and will subsequently lead to coordinated and adapted management in the event of planned disruptions or unplanned incidents.

The functional modelling of the target system

An analysis of the current situation was carried out through interviews with the various services. The comparison between the functional model produced using ACTIF and the requirements expressed by services enabled the identification of flexible issues to which the project must give priority:

- Informing travellers prior to their journey by means of a web site which provides details of public transport services, enables route computation and can inform travellers during their journey (of roadworks, accidents) so that they may adapt their behaviour or their route by using tramway park and ride sites located in the suburbs, for example.
- Managing reference data, notably the description of static public transport services, cartographic data, blue print etc. Data exchange between partners requires the development of a common data management reference system.
- Improving coordination between operators, i.e. enabling each transport or road operator to be informed of travel conditions in the areas operated by the other partners.

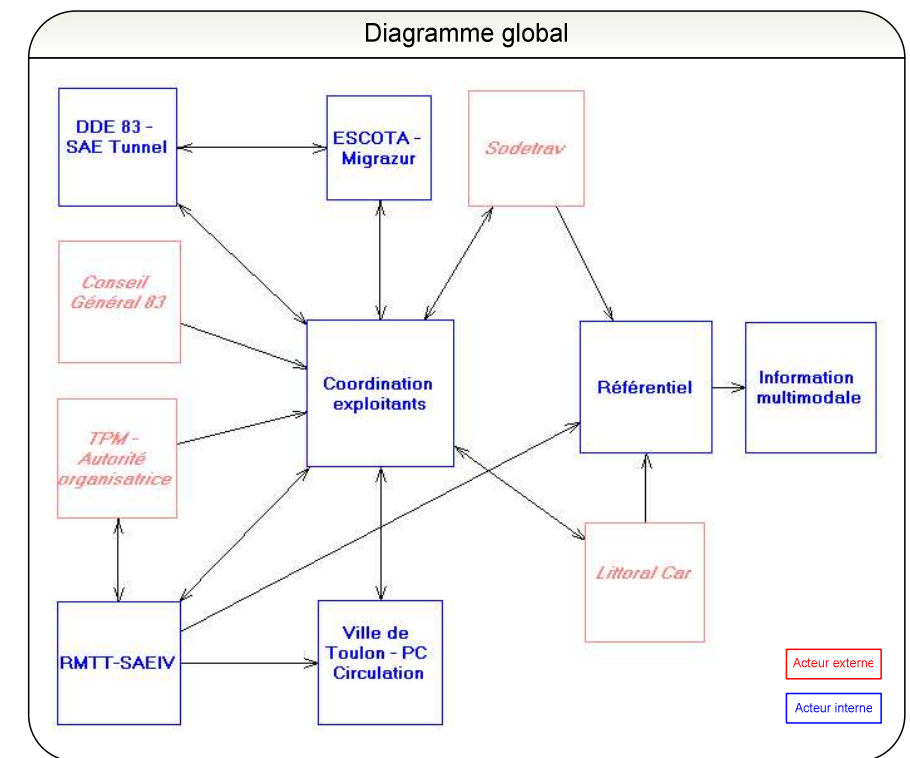
The functioning principles described include existing activities listed during the interviews with the various actors, in addition to other non-existing activities that have been identified as necessary for a fully operational system. These activities mainly concern the notion of coordination and the implementation of a repository, based on functions drawn from the ACTIF model.

The system to be implemented is therefore made up of three distinct functional sub-systems:

- a multimodal information system
- a reference system
- an inter-operator cooperation system

Cooperation relies on the following principles:

- subsidiarity: each actor remains in charge of his area of competence
- collaboration: cooperation on the basis of predefined strategies
- data exchange in asynchronous mode: a given system may continue to operate in spite of the absence or unavailability of another.



Target system modeled with ACTIF