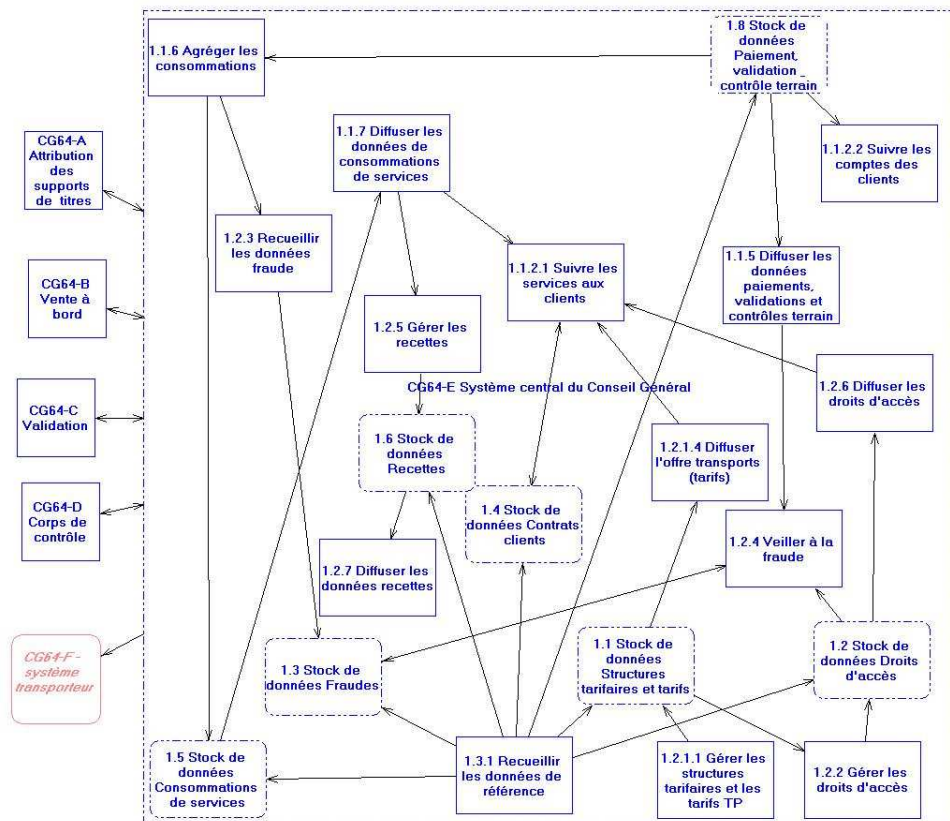


Based on the functions described in the ACTIF model, the OSCAR tool enables the description of systems and sub-systems to be implemented, in addition to their internal logical functioning. An example is given opposite for the county council's central system.

The model proposes data flows between functions within a particular system, but also necessary interfaces (outside the main frame of the diagram) in terms of information exchange with other systems and organizations to be implemented :

- ▶ in blue, the other sub-systems of the county council (Conseil Général), whose functions are described,
- ▶ in red, external systems (whose functions are not described).

The presence of a one or two-way arrow shows one way or two-way data exchange.



Follow-up recommendations

This federative project must be designed on the basis of shared objectives. The recommendations made by the ACTIF team and presented to the transport commission of the Pyrénées Atlantiques council primarily concern the need to establish a common and lasting project group, who will design the overall project, monitor and possibly verify the concrete development of the different ticketing systems and will take into account long term developments (extension of inter-modal services, geographic extension, diversification of transport-based

products...). A form of assistance for the contracting authority appears essential.

The implementation of the county council's ticketing system is programmed for autumn 2006. A more flexible schedule may be adopted by the other partners, but common specifications must rapidly be established for the overall project. Within this scope, the regional council, who is a member of the group, is invited to give concrete expression to the recommendations of the Regional Charter (provide practical advice) and to encourage the other local authorities to take it into account.

How ACTIF helped: statement from Jean-Pierre BEAUJAUULT, Head of Transport Service, Pyrénées Atlantiques council

"The ACTIF approach provided an essential framework for facilitating technical solidarity between transport authorities. Ticketing systems are the most federative element of this project which under the presidency of the county council, aims to encourage dialogue and exchange between the transport authorities who are involved in organizing services in the Pyrénées Atlantiques area, namely the Aquitaine regional authority, the Pau metropolitan council and the joint transport union of the Bayonne metropolitan area. The Midi-Pyrénées area, who is in charge of the Tarbes-Pau line, is not involved at the present time, but will be in the near future.

The project is part of a more general approach which aims to unite transport authorities on major themes such as electronic ticketing, but also information, signing, and the complementarity of networks.

Since September 2004, this dialogue has been assisted notably by the integration of elected members of the other transport authorities into the Transport Steering Committee, an advisory body set up by the county council as part of its review of its County Transport Master-plan and until recently strictly confined to county councillors.

In the mid-term, this dialogue may lead to the creation of an organization such as a joint transport union.

In terms of electronic ticketing, the ACTIF approach largely contributed towards exchange between the different actors of the system. The presentation of results to the Transport Steering Committee (whose membership has been broadened as mentioned above) led to the creation of a project group whose initial work has already enabled the joint selection of a contracting authority assistant and elaboration of the corresponding work programme. From now on, working together will be part and parcel of the four transport authorities' daily life".

Project: set up an electronic ticketing system run by Pyrénées Atlantiques council, (Conseil Général) that can interoperate with existing or future systems.

Challenge: ensure coherent development of public transport, which will enable it to be used in a better manner.

How ACTIF helped: the model and the OSCAR tool were used to represent the different systems to be implemented and their interfaces.

The council's project

In 2004, the council signed agreements with transport companies operating regular lines, thereby delegating the management of public transport services. The financial agreements are based on an estimation of revenue provided by the transport operators. The amount of the payments to be made to the transport operators is to be re-discussed during the course of the contract (under normal circumstances at the end of 2005, but this date is likely to be deferred following an agreement between the council and the operators) and will be based on actual revenue for the lines in question.

However, the majority of transport operators have outdated or even non existent electronic fare collection equipment. It is therefore vital to rapidly develop a reliable revenue collection and control system.

Rather than developing a simple and quick solution, based on mobile ticket machines that cannot issue magnetic tickets or similar electronic travel documents (an economic system in the short term but less reliable), the council preferred to aim for a more ambitious electronic ticketing system designed in collaboration with the other organizers, so that the long term compatibility and interoperability with future systems can be ensured.

The challenge for the Pyrénées Atlantiques council is to federate electronic ticketing information to progressively provide the county with a homogeneous and high-quality transport network at the service of the population, whilst enabling the monitoring of travel behaviour and the overall allocation of revenue.



The use of ACTIF

With this aim in mind, the Pyrénées Atlantiques council called on the ACTIF teams (CERTU and SETEC ITS) to assist it in the initial phases of the project, in order to identify the most suitable procedures and data collection means, and to define the specifications to be implemented for its system. The objective is to ensure the system's operativeness relatively soon (autumn 2006), whilst still leaving it open to a move towards a possible multimodal fare system in two or three years time.

The ACTIF team provided assistance from May to September 2005. The main areas of study are given below:

- ▶ objectives and requirements of the council,
- ▶ context and project scope,
- ▶ functional analysis of existing and future systems,
- ▶ functional and logical architectures,
- ▶ recommendations for future action.

The full report is available on-line at www.its-actif.org

A project ?

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

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The objectives and requirements in the short and mid-term

The objectives of the council are to provide a homogeneous and continuous offer throughout the Pyrénées Atlantiques, and even beyond, by integrating the Lourdes and Tarbes basins and the neighbouring localities of the Landes. They will therefore have an impact on the ticketing systems of the other transport authorities.

In the approach used with ACTIF, an analysis was made on the basis of :

- ▶ requirements expressed directly by the council on its ticketing system – translated in the short and mid term into functions allocated to the operators and the Pyrénées Atlantiques central ticketing system,
- ▶ requirements in terms of interfaces to be ensured with the other partners, transport authorities and possibly their operators.

In the short term the Pyrénées Atlantiques ticketing system must help to facilitate dialogue regarding revenue for the delegated management of public services and provide better knowledge of the actual use of services.

In the mid term it must :

- ▶ ensure the sale, validation and inspection of tickets,
- ▶ be a tool enabling the measurement of activity in order to provide more in-depth knowledge of the use of services and improved knowledge of travel behaviour,

- ▶ provide a gateway to fare-based products at the service of the population that will facilitate the use of public transport and notably multi/intermodal use, by taking into account services provided by other transport authorities.

This last objective implies the development of a common framework (procedures, tools..) and adequate means (personnel and equipment) to carry out these tasks.



The context, the project scope

The Pyrénées Atlantiques is served by internal public road transport lines (school services and regular commercial lines) and regional lines (internal regional express transport and regional lines from the Aquitaine and Midi-Pyrénées counties), by the rail network (national and regional) and by two urban networks (Bayonne and Pau). Each network has its own fare system, individual sales methods, and in certain cases fraud payment collection means. The same applies to other elements that make up the public transport offer (notably information, station equipment).

In Pau and the surrounding area, there is only one operator who does not have an electronic ticketing system (magnetic tickets or passes are sold on-board or in designated locations).

The Bayonne-Anglet-Biarritz area and its operator have set up their own ticketing system with contactless magnetic "passes" (smartcard), but unfortunately prior to the publishing of the INTERBOB and INTERCODE standards. The compatibility of this system with the various standards must be checked and future developments defined on the basis of these standards.

On the regional network, a smartcard (Modalis) has been developed for Bordeaux and its suburbs. This card is likely to be further developed. An interoperability charter has been defined, but primarily in the Bordeaux area and the towns in the county of Gironde, covered by express regional transport (TER). The region's transport authorities were only provided with brief information on the principles of this charter, without any offer of assistance or request for adherence to the charter.

On the county council's network, there is no ticketing system that is common to the 21 operators of interurban bus services. The on-board ticket sale equipment is mostly outdated.

All the authorities and operators contacted have agreed to develop interoperable ticketing systems in the long term, which will guarantee homogeneous functioning rules.

The actors identified in this project and represented in the steering committee are :

- ▶ the Pyrénées Atlantiques county council (committee chair) and its 21 transport operators primarily represented via two trade unions,
- ▶ the region, which represents its main operator in the county (the SNCF),
- ▶ the urban area of Pau and its operator,
- ▶ the urban area of Bayonne-Anglet-Biarritz and its transport operator.

In this initial approach, the geographic scope has not been extended to cover the public transport services of the urban areas of Tarbes and Lourdes (another county, another region). However, information on definitive choices made within the project will be provided to them in order to plan and anticipate the development of homogeneous services.

The functional analysis of existing and future systems

An analysis of the actors highlighted basic tendencies that can be found throughout France :

- ▶ in urban areas, there is usually a single transport operator associated with a major industrialist, that possesses a ticketing system or is likely to be equipped with one in the future,
- ▶ however, county-based transport is operated by a certain number of companies that vary in size (fairly small in general), have little or no electronic ticketing equipment and do not have the means of providing a ticketing system themselves.

Based on functional groups proposed by the ACTIF model, the table below summarizes the functions that are ensured or not, by the different ticketing systems. In addition to the fact that the functions carried out are not identical, their allocation between operators and transport authorities as well as their functioning principles are inconsistent.

Functions performed by	County council	Private operators in county	Metropolitan authorities	Urban operator
Ticket sales		x		x
Customer contract management	x	x		x
Payment collection		x		x
Validation		x		x
Inspection	x	x		x
Information consolidation	x			x
Fare organization management	x		Dialogue between transport authorities and operators	
Receipts management	x	x		x
Data sharing	Lack of common shared data repository			

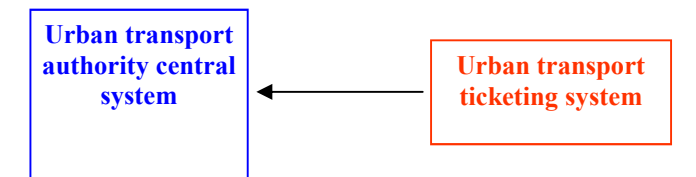
Functional and logical architectures

This leads to very different functional and logical architectures :

- ▶ within a county, there is a ticketing system centralized by the county council, which is not run by transport operators but provides them with equipment and information,
- ▶ within a metropolitan area, it is the transport operator who runs a ticketing system and provides the transport authority with data of all types.

For metropolitan areas

The ticketing system is managed by the transport operator. The transport authority has its own "light" system, supplied with information by the operator, which enables the monitoring of receipts within the scope of delegated public transport service management.



The use of the OSCAR tool provides diagrams of each organization and system, whilst showing the relationships between them. The following diagrams are examples of output provided by OSCAR.

For the county

The county council's central ticketing system must be able to ensure the following "back-office" functions: issue contact-less travel passes, validate tickets and passes, manage field equipment, centrally manage the entire service.

In "front-office" mode, in particular in buses, the field equipment must be able to perform functions that directly interface with the user: ticket sales, payment reception, validation and inspection.

General diagram of the county's project architecture

