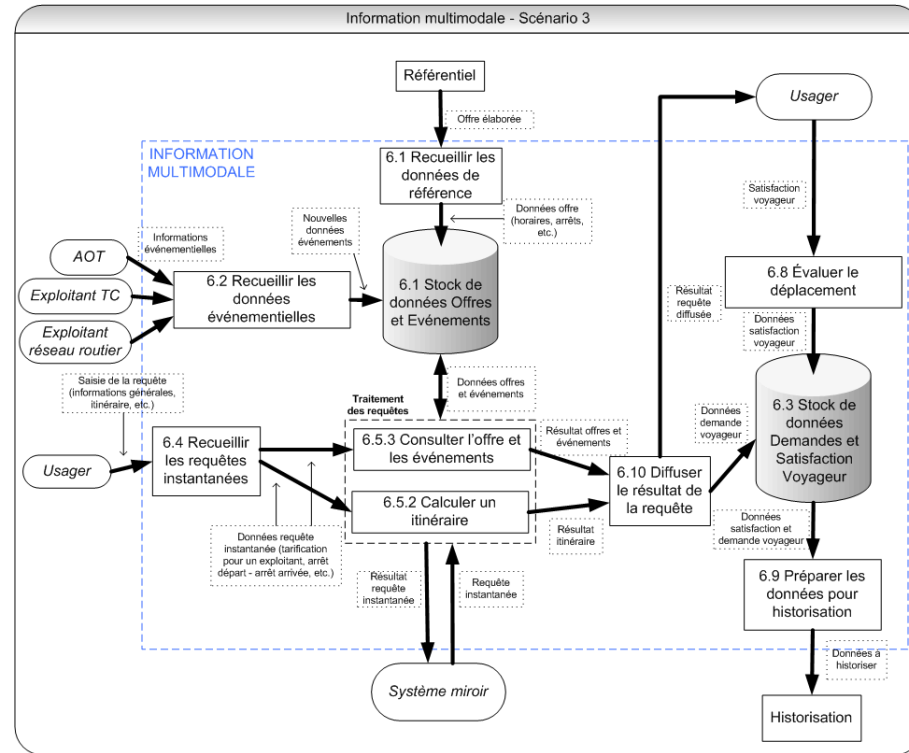


The functional diagram of a sub-system

This diagram presents the “multimodal information” functional sub-system. One of its fundamental characteristics is the link with mirror systems, which enables route computation over a wider geographic area.

As for the “repository” sub-system, it enables the “multimodal information” sub-system to be supplied with static data that describe the entire public and individual transport network (timetable, stops, fares,.....). These data are then used to answer enquiries from users and to propose an optimal route.

The “log” sub-system enables user requests to be recorded for subsequent analysis. This analysis provides a better understanding of demand and enables the services offered to be modified accordingly, notably in terms of travel connections.



The benefits of ACTIF

The ACTIF model takes into account all transport-related problems, notably intermodality, and proposes a functional approach in answer to these problems, particularly in a complex context. The OSCAR tool gives concrete expression to this approach by providing diagrams that propose different scenarios.

The ACTIF model proposes a common “working language” with the aim of achieving the interoperability of transport information systems, thereby enabling cross-border problems to be tackled, for example.

Statement from Frédéric NARDUZZI – Project manager

“Within the scope of the feasibility study that the Alsace region placed us in charge of, and indeed even in our tender, SETEC-ITS implemented the different elements proposed by ACTIF. We based our approach on the ACTIF method which we applied throughout the project.

Through the OSCAR tool, the ACTIF model enabled us to deve-

lop three function-based scenarios that were put forward to the contracting authority. It enabled the modelling framework to be defined (functions, logical data flows, datastores) and interfaces to be identified at an early stage, in particular links with other multimodal information systems. This saved a considerable amount of time and increased efficiency when developing scenarios which were consequently easier to analyse and discuss”.

- Within the scope of this particular study, the ACTIF model was able to provide:
- a view of data flows (static and event-related) and data exchange between actors,
 - repository management,
 - route computation supply management,
 - a record of all data.

The use of ACTIF ensures that vital functions are not forgotten in the implementation of a system. In addition, the interactions between functions are highlighted.

Project: implement a multi-modal information system for transport users in the Alsace Region.

Challenge: increase public transport use by providing comprehensive information on available services.

How ACTIF helped: The ACTIF methodology was applied during the feasibility study and the ACTIF model was used to produce different functional scenarios.

The local context

Actors eager to encourage multimodality

The different transport actors in the Alsace region expressed their wish to develop a Multimodal Information System (MIS). The aim of this type of tool is to provide users with an overall view of the transport services available, by integrating the services of the various networks.

One of the primary goals of such a system is to encourage intermodal and /or multimodal travel and therefore participate in the growth of collective transport use. This latter point is the main objective set by the Technical Committee comprising the regional council, the Bas-Rhin and Haut-Rhin councils, the various transport authorities, public transport operators, road operators and other transport actors.

The Alsace Regional Council is the contracting authority and has launched a feasibility study for the implementation of a regional multimodal information system. Cross-border aspects, which are particularly important in Alsace must be taken into account.



The use of ACTIF

An initiative of the project manager approved by the contracting authority

The project manager, SETEC ITS, decided to use ACTIF during the different stages of the feasibility study. This tool-equipped method enabled a rapid:

- ▶ definition of the project's scope
- ▶ identification of requirements
- ▶ analysis of the current situation
- ▶ modelling of several functional scenarios.

With the exception of the analysis of the current situation, the main results of these different phases are described overleaf. The diagnosis is described in full on the ACTIF web site: www.its-actif.org

A project ?

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

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The approach used

Identifying the project scope

For the Alsace Region and its partners, the main aim of the Multimodal Information System project is to increase public transport use by providing potential users with information on available services, including connections, changes in transport mode (from car to public transport for example) and an idea of travel expenses.

The types of data likely to be included in the MIS are described below :

Icône	Description
	Static data (PT lines, timetables, fares)
	Forecast incident data (planned disruptions and events: road-works, protests....).
	Cartographic data
	Multimodal sites (park and ride locations, stations, etc).

The following transport modes are taken into account in the feasibility study :

Icône	Description	Icône	Description
	Urban collective transport (bus) or interurban collective transport (coaches)		Cycles
	Demand responsive urban or interurban transport		Pedestrians
	Public rail transport (regional express transport)		Network availability for the disabled
	Private vehicles		

This implies that all actors involved in the transport sector need to be considered as stakeholders in the study. These actors include transport authorities in addition to managers and operators of road and public transport networks.

The integration of public transport services available in Germany and Switzerland is ensured through planned links with equivalent mirror systems.

Identifying requirements

The requirements and expectations expressed by the different partners are summarized below:

- ▶ encouraging public transport policies
- ▶ offering comprehensive information on transport services available in Alsace, and the relative fares, for all the types of transport previously mentioned
- ▶ integrating cross-border issues
- ▶ enabling users to plan their trips without needing to know the networks of the operators taking part in the project
- ▶ taking into account planned disruptions
- ▶ facilitating information exchange between partners
- ▶ upgrading information available to operators

The modelling of several functional scenarios

Based on the requirements expressed by the various partners in terms of transport modes, the nature of data and functionalities, three different scenarios were developed. Each scenario corresponds to a functional description of a system used to meet a set of needs.

Analysis of demand and requirements

Functional description



The functional description of a scenario is based on objects from the ACTIF model: functions, terminators, logical data flows and data stores.

Icône	Description
	1.1 fonction Role or action of the body within the modelled system
	Terminator Body whose internal functioning is not modelled in ACTIF, but who is involved in data exchange
	Traffic data Logical data flow. Information exchange (data or requests) between functions, terminators and data stores.
	9.1 Data store Data stores: Element used to store data which can be made available to terminators and functions.

Scenario example

The scenario below (scenario 3 of the study) has the advantage of being the most detailed and comprehensive and shows on which basis discussion between the different actors can be founded, thanks to models produced from the use of ACTIF and the OSCAR tool.

In this scenario, the transport authorities, public transport operators, road operators and suppliers of cartographic data must provide static data (timetables, stations/stops, fares etc). With the exception of cartographic data suppliers, they must also provide dynamic data (incidents on the network).The following table shows the information to be included:

Exploitation des données	Observation
 	Use of urban, interurban and cross border public transport data, whilst taking into account the disabled.
 	Use of structured data on demand-responsive transport, whilst taking into account the disabled.
 	Visualization and use of structured inter-urban transport data provided by the SCNF (regional express trains).
 	Use of personal vehicle structured data (route computation linked to public transport).
 	Visualization of information on the cycle network. Use of cycles on computed routes.
 	Suggested pedestrian routes to reach a stop/station or final destination.
 	Visualization of multimodal station information. Suggested personal vehicle routes with reference to the nearest multimodal station to the user's origin.

In this scenario, three functional sub-systems "repository" "multimodal information" and "log" must be distinguished due to the nature of the information dealt with.

Multimodal information

The functional sub-system entitled "Multimodal information" presents information in a form that is understandable to transport users. The user consults this functional sub-system via pre-defined enquiries, adapted to his/her needs. In certain cases these enquiries may be forwarded to mirror systems. In this particular case, the mirror systems are the multimodal information systems of Germany and Switzerland. The "multimodal information" functional sub system also enables all user enquiries to be stored.

Repository

The static data (timetables, stops, lines etc) are included within the "repository" functional sub-system, whereas incident data (forecast and planned) are included in the "multimodal information" functional sub system. External service suppliers are responsible for providing information on tourist sites or public buildings (town halls, public swimming pools etc). System operators have the task of checking the overall coherency of the various offers and updating the repository.

Log

The functional sub system entitled "log" enables user enquiries to be forwarded to transport authorities in order to compare actual user requirements to the existing public transport services on offer.

