SAMPO
System for Advanced Management of Public Transport Operations

SAMPO

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Partners: ATAF, Azienda di Trasporto dell'Area Fiorentina (I) City of Gothenburg (SE) De Lijn Transport Company (BE) ETTS, European Transport Telematics Systems (IR) Logistik Centrum (SE) Mobisoft Oy (FI) Municipality of Tuusula (FI) PLANit Sweden AB (SE) SOFTECO SISMAT SpA Town of Seinajoki (FI) TTR, Transport & Travel Research (UK) TORG, Univ. of Newcastle (UK) Tritel, Transport, Infrastructure & Telematics (BE) Viatek Oy, Tampere, (FI)	
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OBJECTIVES

SAMPO (System for Advanced Management of Public Transport Operations) is a European demonstration project in the domain of Transport Telematics part-funded in the EU Fourth Framework Programme. The main goal of SAMPO was to assess the added potential and the effectiveness of telematics technologies to provide demand responsive transport services (DRT). The aim of the project was to develop and demonstrate demand-responsive public transport services in rural and urban areas and regions, and for the use of different passenger categories, such as elderly, disabled and other special groups as well as for the general public. An important objective was to reduce operating costs of public transport services by the implementation of more flexible schemes for service operations.

TECHNOLOGIES AND APPROACH USED

The aim of DRT is to provide services "on demand" from the passengers. DRT are undertaken on a variety of modes i.e. buses, taxis, invataxis (specially equipped for mobility impaired persons), minibuses and feeder services for express coach, tram and rail services. Services can be integrated between different modes.

The telematics systems for operation of a DRT are based upon organisation of Travel Dispatch Centres (TDC). TDCs use booking and reservation systems which have the capacity to dynamically assign passengers to vehicles and optimise the routes and schedules. A variety of enabling technologies are used for implementation of a DRTS, including: booking and reservation systems, network design and optimisation, static and dynamic scheduling and assignment systems, dynamic systems for management and optimisation of DRT, vehicle location and monitoring hardware and software, in-vehicle terminals, meters and display systems.

PERSONALBUS™ is the TDC software system developed by SOFTECO SISMAT for the Italian DRT application in Florence and Campi Bisenzio. PERSONALBUS™ supports TDC operators in several tasks, including customers order handling, journey booking, route and service planning, service reporting, service statistics. With PERSONALBUS™, routes and journeys are not pre-planned: they are dinamically defined upon customers demand, whose requests determine the order and timing of visit of stops by the scheduled bus and the itineray of the journey.
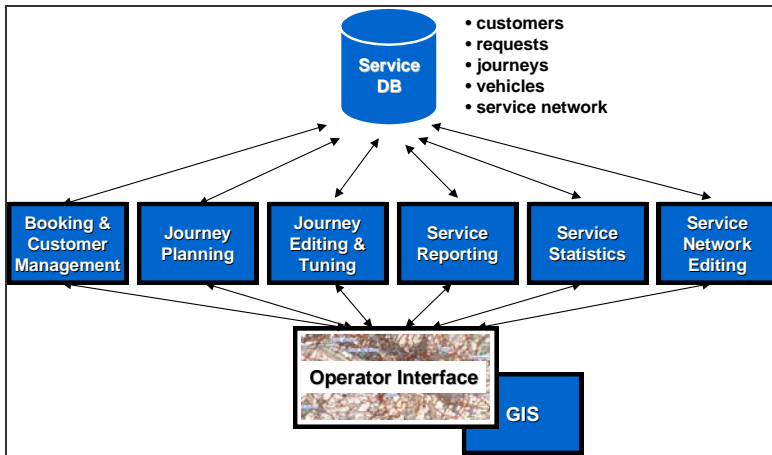
Fig. 1 – Functional architecture of PERSONALBUS™

Through a graphical user interface (figure 2 below shows a sample screen), TDC operators can handle all service operations, including:

- customer management (customer personal data handling),
- trip request information management, including origin and destination stops, desired departure and arrival times, number of seats requested
- service formation, including automated route planning and journey composition, manual journey editing and definition of special services
- service reporting (journey tables for bus drivers) and statistics
- service network editing and update

PERSONALBUS™ runs on Pentium-based workstations and is implemented using the Oracle™ DBMS, the MapInfo™ GIS environment, C, C++ under MS Windows.
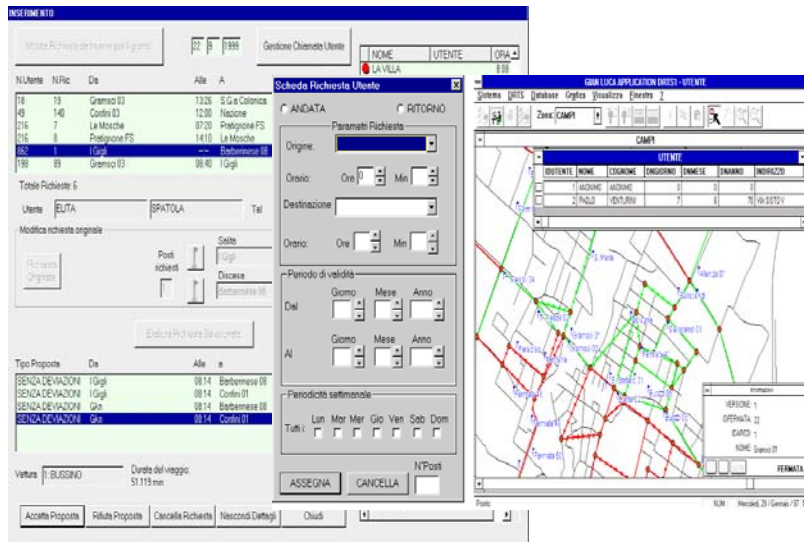

Fig. 2 – Trip booking through the operator interface in PERSONALBUS™

END-USERS INVOLVEMENT

Within the SAMPO consortium, end users and public administrations have been involved from five European countries. The participating cities include Seinäjoki and Tuusula-Kerava-Järvenpää region in Finland, Hasselt in Belgium, Kilkenny region in Ireland, Florence and Campi Bisenzio in Italy and Gothenburg in Sweden.

TEST SITES

SAMPO test sites are located in the above five European countries.

The experiment designing started in each of the SAMPO sites in 1995. The implementation started mainly in the turn of the year 1996-1997. During the second half of 1997 the project evaluation was carried out, and the final report submitted by the end of the year 1997.

The italian site is located in Campi Bisenzio, a small-sized town located within the metropolitan area of Florence.

The SAMPO application, there, was related to the provision of on-demand bus services operated among some 70 stops (meeting points) in an area of approximately 30 Km^2 . The service was managed by ATAF through the PERSONALBUS™ developed by SOFTECO SISMAT.

The service started in Campi on 1.6.1997 and, after an experimental period of few months, is currently being operated on a regular basis.