



**Intelligent In-Vehicle Terminal for Multi-modal,
Flexible, Collective Transport Systems**

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information technology

INVETE

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Partners:

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OBJECTIVES

The Mission of INVETE is the Design, Realisation and Validation of an In-Vehicle Terminal (IVT) for different transport services (regular PT, Demand Responsive Transport, door-to-door, taxi) which operates in different environments (AVL GSM, Private Radio Network...).

The IVT responds to the user needs of terminal users and transport companies for different transport modes. The IVT integrates the on-board devices and communication devices in order to connect with the control centre. Applications will be developed for flexible and regular collective transport services.

The IVT and the IVT services will be validated and evaluated in test sites in Finland and Italy characterised by different services and technological base infrastructures for different transport modes.

Clear needs for an IVT for Demand Responsive Transport (DRT) services and regular collective transport services has been identified during previous R&D projects on national and international level. The terminals available on the market are standalone and do not fulfil the different needs of flexible collective transport services. Moreover the increased use of telematics in collective transport vehicles results in a wide variety of devices and displays, which has a negative effect on the behaviour of the driver, on operation management and on maintenance.



Based on these starting user needs, INVETE is to develop a *modular, multi-application* in-vehicle terminal, able to support a variety of functionalities for both conventional (i.e. line based) and flexible public transport service. Support of demand responsive, flexible transport service operations will be a main focus of the IVT.

It is in this area that the current situation of IVT market reveals clear needs for suitable devices, able to cope with the particular requirements of DRT operations not covered by currently available market products. Furthermore, the INVETE IVT will have as a central requirement the capability of supporting regular public transport service operations as well.

This will allow vehicles (e.g. minibuses) equipped by the INVETE IVT being interoperable across the different service modalities, regular and flexible, which is often a requirement of PT service operators. A number of strategic goals are thus assumed as a basis for the design and development of the IVT.



Specifically, the target terminal will have to:

- provide a basic platform for in-vehicle information management and applications in a number of *different collective transport service modes*, including regular, line-based public transport services, demand-responsive bus services, individual and shared taxi services;
- support *multiple system and communication environments*; - be open to allow *easy integration of future applications*;
- be integrated and *interoperable with other on-board telematics equipments*.



END-USERS INVOLVEMENT

Within INVETE, end users are involved from three EU countries and include Public Transport operators from Florence (Italy), Antwerp (Belgium) and Tampere (Finland).

TEST SITES

Validation trials of the INVETE IVT are planned for several transport modes, including regular buses, Demand Responsive Transport services in low-demand areas, special services for Disabled & Elderly people, shared taxi services. The trials will be conducted in Italy and Finland.