



# CARLINK Wireless Traffic Service Platform for Linking Cars

## Project Facts

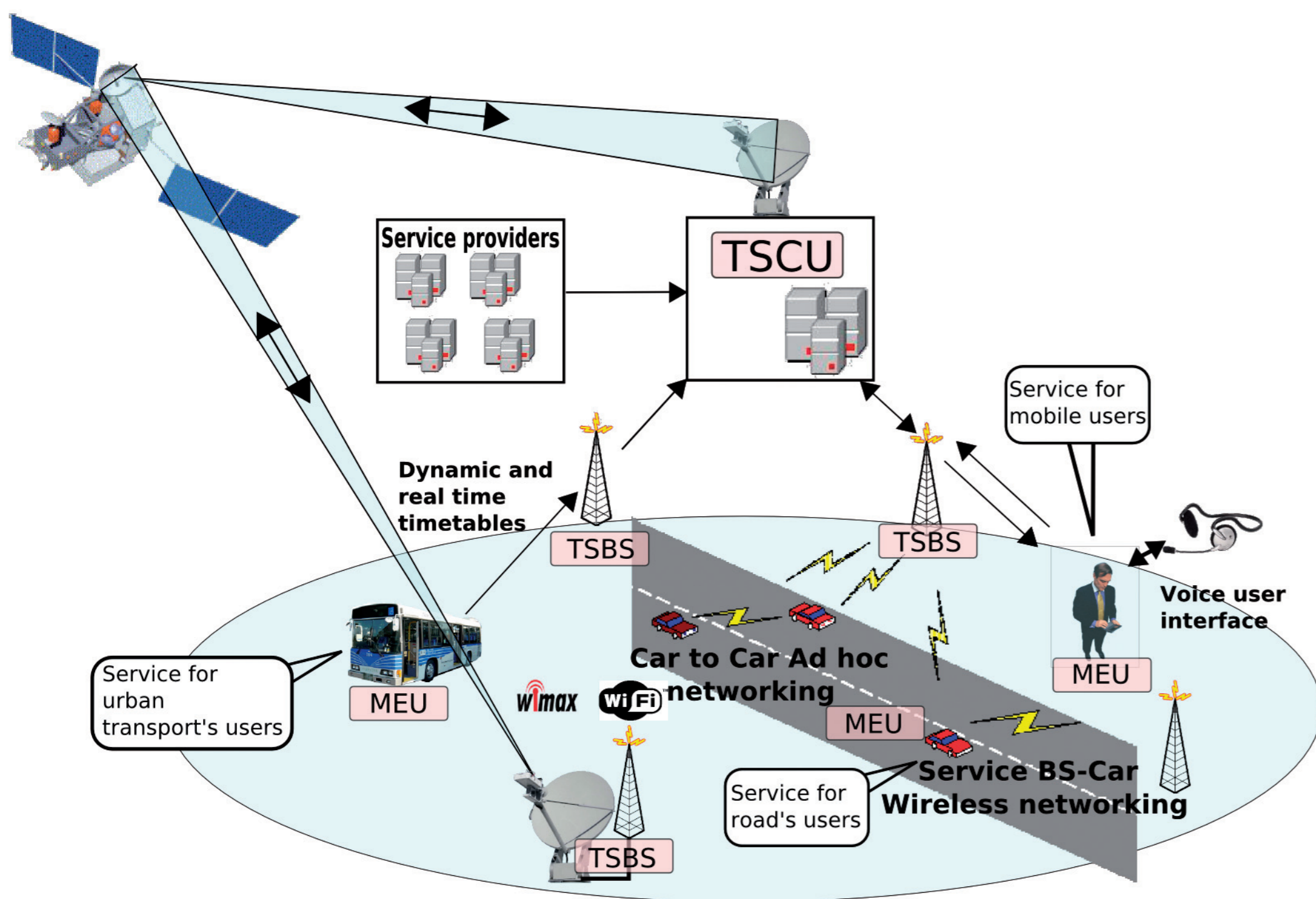
- The aim of this project is to develop an intelligent wireless traffic service platform between cars supported with wireless transceivers beside the road(s).
- Two years project started in September 2006 and ends in December 2008
- EU Eureka-program Celtic-cluster (call 3) project, partners from Finland, Spain and Luxembourg
- ETRA I+D from Spain is the project coordinator. FMI and CRP HT coordinates the Finnish and Luxembourg project teams respectively
- Finland: FMI, Mobisoft, Sunit, VTT and Infotripla
- Spain: ETRA I+D, Moviquity, University of Malaga
- Luxembourg: CRP HT, Synergiums, ACL

## Goals

- Intelligent wireless traffic service platform
- Real-time local road weather and traffic data applications
- Urban transport traffic management
- Information broadcasting/sharing applications
- Fast connectivity and routing schemes for ad-hoc networking
- Hands/eyes free applications enabling the interaction with the information system

## Platform Structure

- **Traffic Service Central Unit (TSCU)** act as communication centre, gathering vehicle data from base station network and GPRS-network, delivers data to service cores and delivers weather and warning data from services to vehicles
- **Traffic Service Base Station(s) (TSBS)** beside the road store the up-to-date data from central unit and deliver it to bypassing vehicles. At the same time vehicle observation data is gathered and delivered to the central unit
- **Mobile End User(s) (MEU)** in vehicles receive newest service data (e.g. local weather and warnings) when they pass by TSBS. At the same time vehicle observation data is delivered to service base station. MEUs can also forward their newest service data to encountering vehicles ? base station range enhanced
- Critical data (e.g. accident warning) delivered through gprs-network from TSCU to MEU, in order to ensure instant delivery



## FINLAND

- Locations for base stations (TSBS) and connection to weather stations and network required, practically limiting the locations.
- Infrastructure:  
TSCU-server not physically in the area, connected to TSBS through fixed network connection  
TSBS-stations constructed from WLAN-based access points with host laptops, fixed network connection to TSCU  
WiMAX communication solution.  
MEU units will be installed to 1-2 vehicles, into Sunit Car PC modules. Vehicle observations will be partially emulated, partially generated from Helsinki own measurements  
Services are delivered through TSCU. Both service cores and TSCU are located in fixed network

## SPAIN

- Detects and registers the different stops done by the MEU, saving data about the:
  - time information
  - position in the route
  - GPS coordinates
- Registers additional information provided by the system operator through the car board in any moment of the route.
- Register information on the GPS coordinates:
  - configurable parameter from the car board
  - every x seconds -10 per default-
- Keeps a database with the routes performed
- Dumps the data gathered for further processing via wireless – GPRS-

## LUXEMBOURG

- CARLINK platform: A "traffic information centre" (provided by data providers), an "infrastructure to car" and a "car to car" communication system.
- The user is permanently connected and able to get updated information about his travel.
- If an unexpected event happens, (and is detected by other users or car's sensors), it could be reported to the other users.
- Leaving his car, the mobile user stays connected to the system via any Nomad device (PDA, smartphone).
- The objective is to provide real time time tables, accurate bus time travel, possible Bus2Bus information exchange, dynamic fleet management, end user (mobile but not only) information availability.