CASE STUDY:

AIViS / TETRA based dispatching center of Bratislava public transit

Objectives of the project

The Bratislava public transit vehicles includes about 500 buses, 200 trams, 200 trolleybuses and 10 dispatching servicing cars. All of them are equipped with Motorola MTH800 or CM360 working on the Tetra radio frequency infrastructure servicing the Bratislava area. This enables reliable communication between dispatching centre, servicing cars and particular vehicles on the routs. The basic communication facility are SDS (Short Data text Service messages) as emergency and information messages send from vehicles to dispatching centre, otherwise the talking audio function could be initialised from dispatcher to vehicle only. The aim of the project was to equip the Dispatching Centre with a set of graphical consoles to enable the operators to:

- Monitor the status and function of the communication lines and Tetra infrastructure
- Receive, browse, search and filter a list of SDS Messages on the screen
- Initialize the one way talk from dispatcher to vehicles - separately to groups of buses, trams or trolleys - using the centracom audio console on each dispatching workstation
- Define dynamic talking groups (a selected set of vehicles) to enable selected talk
- Enable "private talk" to selected vehicle
- Watching on-line position of the dispatching cars on the Bratislava map

AIVIS software was used as powerful and flexible graphical user interface to design and use dispatching console. Specific drivers are programmed to "centracom audio" and "SDS server" to enable interfaces AIViS - Tetra hardware.

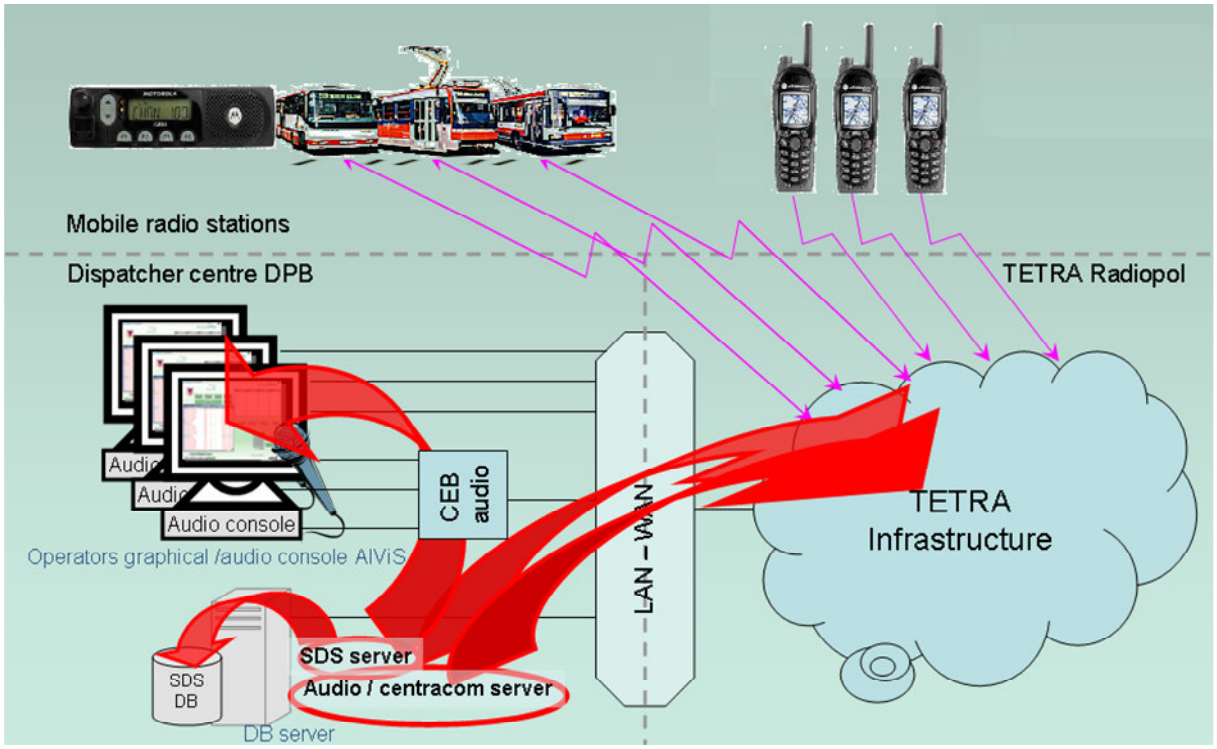
Devices installed

Motorola Tetra radio frequency infrastructure including Centracom server, CEB audios, WAN..

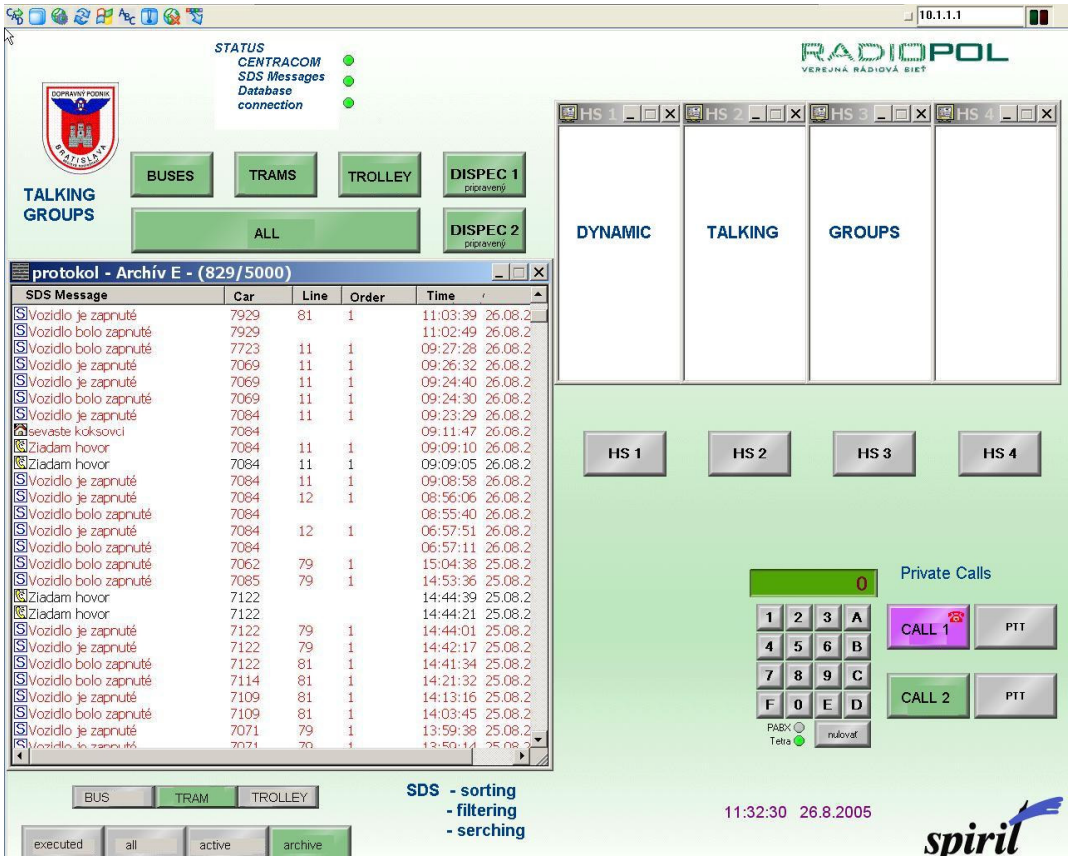
Motorola Mobile stations MTH800 and CM360 (vehicle mounted),

Dispatching center 4x PC WinXP + 4x Audio console

Software - SDS database server MSWin2003 server MS SQL, Dispatcher WinXP + AIViS + centracom driver + SDS driver

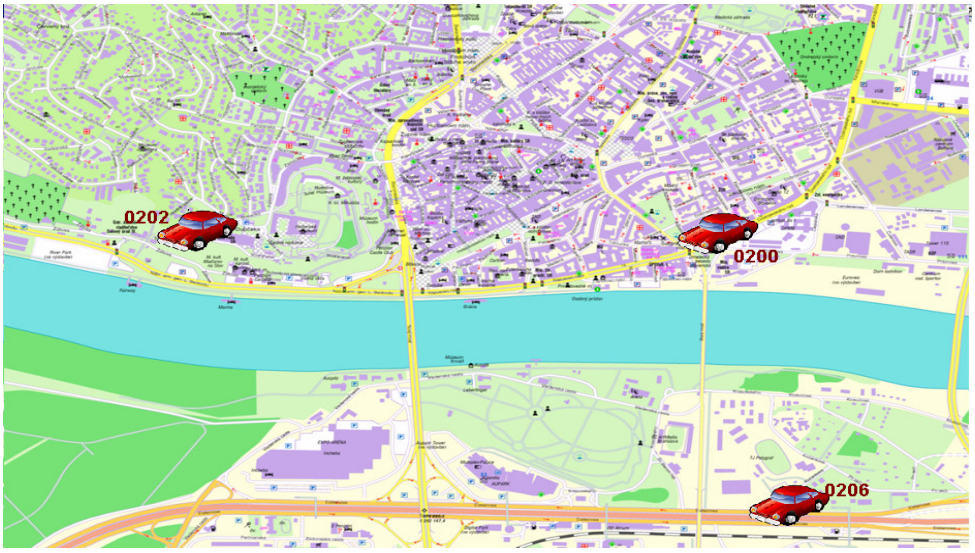


Picture 1) Layout



Picture 2) Dispatcher screen layout

The benefit of usage AIViS software as a tool to design and operate dispatching station was in sparing cost of development user interface and in flexibility to rearrange the layout of the screen any time a new feature should be implemented.
The basic features of AIVIS to place "Push Buttons" and "user events windows" was widely used in this application. Another feature of AIVIS to animate movements of symbols on the map was implemented in the second screen of application, where the position of dispatching cars on Bratislava map was displayed. The GPS coordinate of Motorola radio station is send regularly from dispatching car per SDS into central database. These coordinates are recalculated by AIViS scripts to the real position of the car on the map.



Picture 3) Monitoring the dispatching cars position on the map