Fuel Stop Advisor
Current status of the Fuel Stop Advisor project

Navigation APIs in GENIVI, an overview
FSA project, a status
To-do list and call for contribution
Preamble: Why I’m here

• Peugeot Citroën (PSA) is involved into GENIVI since the beginning, to reduce the development and maintenance costs of an IVI system and to focus on added-value for customers

• GENIVI is the way PSA and other members have decided to follow, in order to achieve standardization of the middleware

• Even if every contributors have their own motivation (according to their company objectives and product road map), GENIVI initiative has proven efficiency of a collaborative work and OSS working model in the road to a pragmatic and concrete standard

• Products currently under development in PSA are GENIVI compliant, and implement the Navigation APIs
Navigation: Some basics

• In the automotive world, everybody talk about navigation, location based services, automotive apps, car connectivity... and mainly about how to make money with
• But the business model is far from being found
• Nobody seem to take in account what are really the needs of a driver into his vehicle
• A user may seem to be a technology addict, but a driver just wants to reach his destination in a safely, comfortably way, by easily listening to music and keep on being in touch with relatives or friends
• Because of long hours spent into a car, for a driver point of view, car is something like part of home, so security is also to be considered (privacy protect)
Navigation: Bird’s eye view

This diagram provides an overview of the links between the head use cases of a navigation defined into the sub packages.
Navigation: GENIVI API
Proof Of Concept and OSS projects

- An API defined by the LBS team has to be proven by a concrete piece of software, the Proof Of Concept (POC)
- A POC in GENIVI is typically made of a software that implements the component and a client that demonstrates the main features
- POCs of Navigation are mainly based on Navit and OSM.
- POCs are mainly running on a desktop under Ubuntu

Because of the powerful plug-in mechanism

No better source of open source map and POI data
Some code snippets of the POC

• C++ for the code, HMI in Qt (Qt GUI or Qt QML)
• DBus for the IPC between clients and servers (Glib DBus or Qt DBus)
• Sqlite3 (for the POIPOC)
• Cmake
• Code is running under Ubuntu 12.04 LTS
Some screenshots of existing stuff

- POC of navigation based on Navit+plugins
- POC of TrafficInfo
- POC of POI Search, based on sqlite3 and OSM data
Fuel Stop Advisor

Never run out of gas
Stop worrying about fuel level
Get Fuel Stop Advisor Application!

Picture: http://www.defensivedriving.com/
Main topics

- Predictive evaluation of the tank distance on the route ahead
- Warning in case of destination wouldn’t be reached with the remaining fuel level
- Proposal of rerouting to an available refill station

Main goal of the FSA demonstrator is to promote the Alliance by an exciting vehicle application widely based on GENIVI APIs
Some code snippets of the FSA

• Input data for tank distance come from a log file (simulated route)
• Fuel consumption on the route is predicted from the speed on route segments
• HMI will be first made in QML and in HTML5
• Map data and fuel stations come from OSM
• DBus is used between HMI, Application and middleware
- New project launched end of 2013: “Fuel Stop Advisor” (FSA), first release in mid March 2014
- TrafficIncidents available as an abstract component for Horizon release (May 2014), so it could be connected to the FSA
- Navit+plugins, POC and FSA project moved to OSS soon (end of February)
Some items of a to-do list

- To port the Navit GENIVI plugins to Tizen
- To port the FSA HMI to HTML5
- To connect to an Internet Service Gateway to get additional fuel station (accessing a POI source hosted on a web server)
- To implement other LBS applications
- To align the code to the Ubuntu 14.04 LTS (Trusty)
- To make the FSA running on a Yocto based target (e.g. on a Renesas automotive target)