Spits – A Strategic Platform for Intelligent Transport Systems

Sense, purpose and aim:

An adaptable ITS platform matching the life time of vehicles and able to run consumer, business and government applications enabling fast growth in the market.

Initial Situation

Nearly all ITS projects focus on applications and not on the system required to run them. The 3 stake holders (consumers, fleet owners and governments) have differing interests and requirements. These must all be possible on one system allowing several parties to benefit from the same investments and enabling large volumes at reasonable prices. Consumers will pay if the services are attractive for them, Fleet owners will invest if they can save fuel and time and governments will invest in the infrastructure if they improve traffic flow, increase safety and reduce emissions.

Problem

Is there an approach that can cover all the requirements and still be affordable? The 3 system components, On Board Unit (OBU) in the vehicle, Road Side Unit (RSU) and Back Office (BO) for providing services, must all be cost effective and have standardized communication channels and protocols. The longevity of the OBU must match the life time of vehicles. The infrastructure in the form of sensors and RSU's must interface with current solutions and be open for modernization. Services should cater for various providers and levels of data security. Security is an overriding consideration.

Proposed Solution

SPITS will create an open, scalable, real-time, distributed, sustainable, secure and affordable platform for cooperative applications supporting ITS into the future. Evolving from existing infotainment systems, SPITS will enable large scale intelligent transport solutions possible in the near future. This will have a huge impact on society in traffic mobility, safety and environment. Starting from knowledge on existing OBU's (e.g. navigation), and knowledge from European programs, SPITS will design the next generation of BU's to be upgradeable and affordable leading to faster market adoption.

Degree of Innovation

There are very few similar solutions. An example is the OBU developed for the SIMtd Field Operational Trial (FOT). However this solution is still not affordable and not designed for extendibility after sales. Within SPITS all opportunities are exploited to use consumer technology, low cost interfaces and available standards (ETSI) to design an extendable solution in a way that will allow high volume production. The solution will enable applications to run from all 3 stake holders and be adapted to new requirements in an economical way. Investments will be enabled by the 3 stakeholders.

Degree of Maturity

Prototypes of SPITS are currently being designed and are expected to be demonstrated in May 2011. A number of use cases are defined that will be used to verify the system. These applications will cover areas from all 3 stake holders and enable FOT's to use the platform in large numbers. A second generation will be designed to complete some of the issues not resolved in the first phase. Currently these are the safety critical applications requiring communications with very low latency and increased security methods. Malicious attacks can be very damaging to both transport systems and lives.

Economic Potential

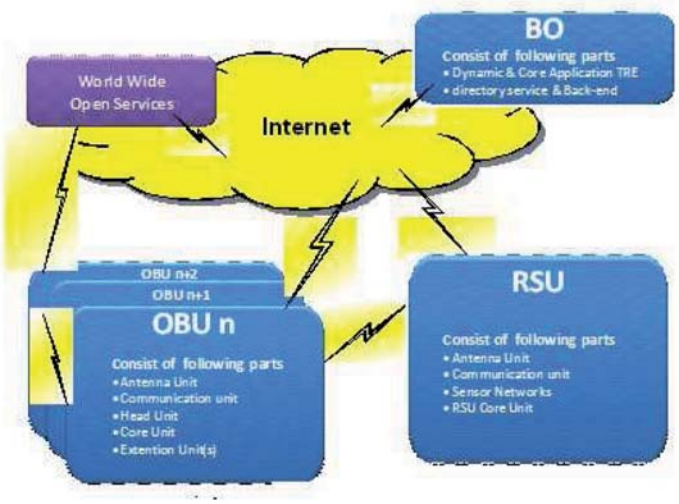
The market potential is large. There are >300M vehicles in Europe. There will be 3 penetration flows within the market, post sales, new cars and up-grades. For this exercise we will presume the price of Euro 350 for an OBU and Euro 6K for a RSU. The new car growth is yearly 2.6% (7.8M) on average and if 5% of the old cars are post market, the yearly market size would be Euro 6.8B. Yearly up-grades would add a further Euro 1B. Added to this potential is the income from services which would be growing from year to year. Presuming 30% of vehicles are spending Euro100/yr this will exceed Euro 9B.

Increase in Comfort

3 groups of beneficiaries are addressed. The consumer gets new services that provide driving guidence, increased safety and more information for a better driving experience. Fleet services can improve logistics and run more efficiently saving fuel and time. Also with the affordability many smaller companies can also benefit. This will also help reduce emissions in towns. Governments will be able to manage traffic flow dynamically at much lower cost. They will be able to have both local and wide spread access to vehicles. Especially highways, congested towns and the environment will benefit.

Improvement in Functionality

SPITS will enable a new driving experience for everyone. The car is connected to the communications cloud and numerous applications will emerge providing an awareness of his surroundings, warnings of incidents, help if the vehicle breaks down or in emergencies and accidents and weather and road conditions related to his position. Guidance to parking places and toll road payments are easy and the same across Europe. Electro vehicles will receive guidance to best energy saving routes and next charging stations. Cooperative driving will enable getting to a destination faster with less anxiety.



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