



PLATAFORMA TECNOLÓGICA CHILENA DE  
INTERNET DEL FUTURO

*First*

Future Internet Roadmap  
Chilean Technology Platform  
EPoSS Initiatives  
2011



European Commission  
Information Society and Media



# First

## Automatic System Detection System



ƒ Undersecretary of Transport, Ministry of Transport and Telecommunications, Government of Chile.

ƒ About the organization: Develop an efficient, safe and environmentally friendly Transportation System in the country.

ƒ Public Transport, Traffic Management, Traffic Safety, Cargo, Transport grants and information for Users.

ƒ Intelligent Transportation Systems (ITS)

ƒ Quantity of members: 1290

ƒ Contact details:

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### *F* **Brief description of the idea:**

Analysis and implementation of an automatic system for traffic incidents detection in the urban area of a medium sized city (less than 400.000 persons), using historical data collected and stored in a system of traffic control. The project will also include the design and implementation of a detection system that identifies the incidence from the field and reports it to a central control.

There exist predictive incident detection systems, based on a long history of traffic data. Another interesting way to explore is to use field mechanisms in order to identify accidents or incidents that occur, some example are: stopped vehicles, blocked intersections, excessively long queues and accidents in general.

### *F* **Technology Area:** EPOSS

### *F* **Research Topic:** Smart Systems for Information and Telecommunication

# First

## Automatic System Detection System



**Objective:** To implement an automatic system of traffic incident detection in a medium sized city in Latin America (less than 400.000 persons), considering reliability and operational/implementation costs aspects.

**Scope:** ITS application in medium sized cities.

**Duration:** 36 months.

**Expected Impact:** To reduce reaction and response times in order to act in an optimal way towards incidents, through an automatic detection system. This system will not require a technological installed infrastructure nor a road network in optimum conditions, so it can be implemented in any medium sized city in Latin America.

**Estimated Investment Effort:** 8 M€



### *F* **Brief description of the idea:**

To implement a system capable to recognize the availability of parking places in the surface, occupied or not occupied, and inform users about this conditions, on public roads in urban areas.

There is not always easy to detect the availability of a parking place in the surface in urban or centric areas automatically. Consequently, to identify and to inform users the availability of parking places, would reduce the time of searching it. This would cause the reduction of the congestion and the pollutant emission of vehicles.

**Technology Area:** EPoSS

**Research Topic:** Smart Systems for Information and Telecommunication



ƒ **Objective:** To evaluate different technologic alternatives capable of identifying and publishing the availability of parking places located in urban areas with the aim of reducing the time associated to the search of parking places, considering infrastructure and road network aspects, as well as economic aspects.

ƒ **Scope:** ITS applications in medium-sized cities in Chile.

ƒ **Duration:** 36 months.

ƒ **Expected Impact:** A timely information about availability of parking places, can be useful to define an access path to a sector and, consequently, a better travel planning.

ƒ Reduction of costs associated to the time of search of parking places and the reduction of accidents for distraction and reduction of the velocity.

ƒ **Estimated Investment Effort:** 8 M€

### *F* **Brief description of the idea:**

Our goal is to provide an information system for public transport users in a middle-size city (with less than 400.000 inhabitants) without many public transport regulations. Without many regulations means that local authorities only define some key safety, mechanical and environmental conditions, while bus owners have to make other decisions, especially those related to schedules and routes. Usually, most technology investment in buses is made by the operators, so if authorities want to give information to users, they have only to get it from operators and share it with the users.

It's often believed that in order to provide an information system for public transport users it's necessary to have a fully regulated transport system. Facing the fact that most Latin American middle-size cities haven't got many transport system regulations...should we wait until they become regulated to start giving information to users?

### *F* **Technology Area:** EPoSS

### *F* **Research Topic:** Smart Systems for Information and Telecommunication

### *ƒ* **Objective:**

*ƒ* To research, design and implement different technology alternatives that permit obtaining information about public transportation in minimal regulation conditions, in order to implement an information system of public transport users.

*ƒ* **Scope:** ITS applications in mid size city of Chile and the rest of the world.

### *ƒ* **Expected Impact:**

In the major portion of the mid size cities of Latin America, the public transportation is executed by private operators and minimally regulated; consequently, the technology implementation of information services to users can not be subordinated to the will of operators. This project aim is to standardize the information systems independently of the regulation levels.

*ƒ* **Duration:** 36 months

*ƒ* **Estimated Investment Effort:** 8 M€

# *First* Information System for maritime, lacustrine and fluvial users



## *F* **Brief description of the idea:**

To research, design and implement technologies that allow obtaining and publicizing transport information (such as routes, carriers, frequency and waiting times) for maritime, lacustrine and fluvial passengers; in medium or big sized city that incorporates locations with isolated population.

A large portion of the southern Chile is connected through maritime, lake and river transportation; this region is has a cold and rainy climate and there is not road continuity (remote areas). This condition easily allows non-compliance with itinerary and time specifications, having to suspend services on many occasions, producing great uncertainty.

Any effort to find a system for obtaining transport information, is useless if there are not developed the necessary media for the timely publication of the information through any communication media of easy access, high availability and reliability.

## *F* **Technology Area:** EPoSS

## *F* **Research Topic:** Smart Systems for Information and Telecommunication

# *First* Information System for maritime, lacustrine and fluvial users



## *ƒ* **Objective:**

*ƒ* To improve access and quality of information for users of maritime, lacustrine and fluvial transport in a medium sized city located in isolated regions, allowing therefore, to reduce levels of uncertainty.

*ƒ* **Scope:** ITS application in medium sized cities located in isolated regions.

## *ƒ* **Expected Impact:**

The generation of a an information system for maritime, lake and river users, must be a priority within the transport politics in Chile, since much of the country uses this means to communicate with isolated areas, besides being a really important transportation for the enhancement of the touristic development in the south of Chile.

*ƒ* **Duration:** 36 months

*ƒ* **Estimated Investment Effort:** 5 M€



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ℱ Business interests: Products for scientific training

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## *F* Brief description of the idea:

### **Semantic Web for mathematics and science. Social knowledge-based system.**

System supported by semantic search engines and structuring of mathematical expressions. Able to establish conceptual relations of language and formulas arising from simple or complex symbols, elements of dialogue and social work of a group of contributors of knowledge. The user interface provides information current through titles hierarchical classification, according to the state in which the social group provides. This evolves to the extent that is accessed by users and is enriched by taxpayers. The social network is for the taxpayers of knowledge and ordinary users are consumers of this, however both sensitize the system for their own adaptation.

# *First* **Semantic Web for Mathematics and Science**



*ƒ* **Technology Area:** EPoSS and NESSI

*ƒ* **Research Topic:** Smart Systems for the Internet of Things (EPOSS) and Adaptative Interactions (NESSI).

*ƒ* **Objective:**

*ƒ* Developing a Semantic Web for mathematics and science. Social knowledge-based system.

*ƒ* **Expected Impact:**

Change in the concept of Web browsing.

*ƒ* **Duration:** 12 months



### ƒ Proteinlab UTEM



ƒ About the organization: Programme of Foresight and Technological Innovation - ProteinLab UTEM - is a multidisciplinary research group of Universidad Tecnológica Metropolitana, under the Department of Academic Research and Development, which studies the impact of using digital technologies to design and sustainable new product development and interactions between people and their environment. Through applied research, study and analysis of future scenarios, emerging technologies and trends, develop products and applications and services in the following areas: ICT and Innovation, Connectivity and Access Digital Design, Interaction and Smart Environments and Sustainable Energy .

ƒ The area of work of the organization is focused on the research and development of new products and services that improve life quality of people.

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# *First* **Smart Classrooms for energy efficiency**



## *ƒ* **Brief description of the idea: Smart Classrooms for energy efficiency**

Research and development of intelligent systems that integrate sensors and video cameras to manage and control energy use in a classroom.

The project postulates that the integration of analogue sensors, image processing and intelligent agents will allow a classroom to self-manage energy consumption according to the number of persons and the activity that they are developing.

The system will be able to manage and control the amount of light required and the air conditioning for the different activities developed in the classroom.

*ƒ* **Technology Area:** EPoSS

*ƒ* **Research Topic:** Smart Systems for the Internet of Things

# *First* **Smart Classrooms for energy efficiency**



European Commission  
Information Society and Media



protein<sup>®</sup>  
lab<sup>®</sup>  
tecnología e innovación para el diseño de productos



*ƒ* **Objective:** To develop a system of energy efficiency through the implementation of smart classrooms for the management and control of energy consumption.

*ƒ* **Scope:** Educational institutions.

*ƒ* **Expected Impact:**

- ƒ* Efficient consumption of energy considering the number of people and the specific activity performed in the classroom.
- ƒ* Savings in the spending of energy.
- ƒ* Development of intelligent environments in education.

*ƒ* **Duration:** 36 months

*ƒ* **European counterpart needed:** Experts in Internet of Things, computing and energy efficiency.

# *First* **Multispectral intelligent lighting system for crop in greenhouses**



## ***ƒ* Brief description of the idea: Multispectral intelligent lighting system for crop in greenhouses.**

The project poses that is it possible to develop an intelligent system that delivers the amount of light required to optimize the growth of crop in a greenhouse.

The system will be capable of identifying the level of plant growth and, according to its size, the amount of multispectral lighting required for each plant in order to accelerate its growth. Furthermore, the systems can also be powered by photovoltaic energy.

The project proposes the integration of video cameras with image processing software and an intelligent agent able to control the system according to the size of the plant.

***ƒ* Technology Area: EPoSS**

***ƒ* Research Topic: Smart Systems for the Internet of Things**

# *First* **Multispectral intelligent lighting system for crop in greenhouses**



*ℱ* **Objective:** To develop a multispectral intelligent lighting system with the aim of accelerating the growth of crops in greenhouses.

*ℱ* **Scope:** Rural areas.

*ℱ* **Expected Impact:**

- ℱ* Improvement of the performance of crops in greenhouses.
- ℱ* Development of intelligent greenhouses.
- ℱ* Introduction of crops in geographic areas with short periods of light.

*ℱ* **Duration:** 36 months

*ℱ* **European counterpart needed:** Experts in Internet of Things, computing and image processing.

# *First* **Telemedicine through Internet of the Things in rural environments**



## ***ƒ* Brief description of the idea: Telemedicine through the Internet of Things in rural environments.**

The project involves the application of telemedicine in primary health care in rural isolated areas with the aim of improving the timely access of citizens to health care. Through the development of intelligent modules for monitoring chronic patients in various rural locations, it could be improved the welfare of persons through a periodic and effective control allowing the decrease of displacements to urban centres. Each smart module will have the necessary devices carry out remote monitoring of medical patients, which will be connected to the Internet and, in case of detecting an anomaly in the data reading, the intelligent module will be connected to urban medical centre through videoconference.

## ***ƒ* Technology Area: EPoSS**

## ***ƒ* Research Topic: Smart Systems for the Internet of Things**

# *First* **Telemedicine through Internet of the Things in rural environments**



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ƒ **Objective:** To develop a telemedicine system based on Internet of Things in rural areas to improve health care.

ƒ **Scope:** Health, ageing.

ƒ **Expected Impact:**

- ƒ Remote monitoring of medical patients.
- ƒ Medical care quality improvement.
- ƒ Reduction of costs.
- ƒ Enhance of response times.
- ƒ General Improvement in the health care experience and its results.
- ƒ Displacement reduction of people in rural communities.

ƒ **Duration:** 24 months

ƒ **European counterpart needed:** Experts in Internet of Things, computing and image processing.



## Tastets System

### *f* **About the organization**

Innovative company with 14 years of experience in the market, with over 1,500 customers and more than 15,000 mobiles being monitored in Chile and abroad, through GPS technology. It offers a management service that operates through a 100% web platform.

### *f* **Area of work of the organization / services / products**

Mobile resource monitoring through GPS technology

### *f* **Business interests**

Security - Logistics - Telemetry

### *f* **Quantity of members**

60 approx.

### *f* **Website**

[www.gps.cl](http://www.gps.cl)

### *f* **Contact details**

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# Localización & Comunidad





### ƒ Brief description of the idea

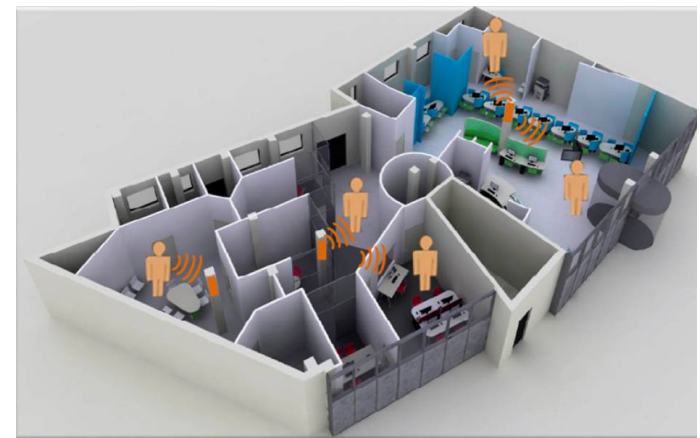
- GPS technology depends on the signal received by the satellites, which is too weak to operate in indoor environments
- People spend much time indoors, or in places with poor reception (homes, offices, malls, parking lots, etc.)
- Having another solution would enable users to locate a store location or items within it, a vehicle in a parking lot, a seat in a stadium, a hospital, to analysis movement, to perform geomarketing, just to name a few

### ƒ Technology Area

#### EPOSS

### ƒ Research Topic

- Smart Systems for Automotive Applications
  - Safety, Driver Assistance
  - Convenience
- Smart Systems for Safety and Security
  - Personal emergency and home security systems





### ƒ Objective

- Determine applicability of the technology indoor GPS (indoor positioning)
- Determine technology integrations (location + sensors)

### ƒ Scope (application areas)

- Safety for drivers and vehicles
- Personal safety (monitoring elderly, sick person, firemen, etc.)
- Analysis of shopping cart trips within a mall or supermarket

### ƒ Duration

12 -18 months (2012 and 2013)

### ƒ Expected Impact

- Provide better service to emergency care companies (eg ambulances)
- Give a more exact service to government institutions (eg police)
- Support institutions that provide services to the community (eg firefighter)
- Improve understanding of customers behavior

### ƒ European counterpart needed (profile needed)

- Research Institute or company which is working with indoor GPS technology indoor (indoor positioning) (eg, Fraunhofer Institute, Germany)

### ƒ Estimated Investment Effort (Effort (M€))

Under definition

