



News Letter

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sm@rtCEM

Issue 04 - December 2013

Editorial

Welcome to the 4th issue of the smartCEM newsletter!

As we introduced in previous issues, thanks to the services that smartCEM will pilot, we want to demonstrate that electromobility can be a valid alternative for our cities and for consumers.

In this issue the above mentioned statement has been confirmed in the interview with Ángel Arias, the hybrid bus driver from San Sebastian. The hybrid bus would not be still, since 2011 a part of public transportation of this Spanish city if this type of vehicle was not a relevant alternative. Dbus offers in their bus fleet not only a hybrid model but also one of the services that smartCEM pilots - EV-efficient driving.

This issue also focuses on presenting the upcoming smartCEM Mobile Portal which aims at ensuring easier access of the EV users to all five advanced EV mobility services piloted by smartCEM. You will also find an update on latest events, such as HFES in Turin and EVS27 in Barcelona, in which smartCEM participated, as well as an overview on the European Commission directive proposal to guarantee the deployment of alternative fuels infrastructure.

We hope you enjoy your read and keep on following the progress of smartCEM: bringing smart connected electromobility to the streets!



Fernando Zubillaga,
smartCEM project coordinator

Interview with Ángel Arias, a Dbus hybrid bus driver in San Sebastian

by Eduardo González



Tell us a little bit about you.

I am a Bus driver of Dbus, I'm 52 years old, married with children. I've always loved buses and since I was a child I wanted this job.

How long have you been a bus driver in general and how long do you drive a hybrid bus?

I have been a bus driver my entire life, I have never tried any other jobs. I have worked within the same sector for almost 30 years now, so I have driven many different kinds of buses in this company over time. There has been a major evolution in buses when it comes to comfort and safety, but also technology, and with the latest addition, the hybrid bus, the difference is remarkable.

Before, we had wooden floors, the seats were really uncomfortable both for drivers and for passengers, and the suspension was very rough, the stop bell was rung pulling a rope... all these have evolved. I drove the prototype bus during the pilot test back in 2008, and have driven it several times since we acquired it, and the experience has been very positive.

Could you tell us a bit about the hybrid bus that you are driving?

The hybrid bus runs very softly, and it is pretty entertaining to drive it. I am always checking the load of the battery, and I enjoy making it perform better, checking its technical behaviour... I like it very much.

What is so different in driving a hybrid bus compared to a conventional combustion engine bus?

Well, as I said, the motion is very smooth thanks to its lack of gearbox. It's noise level is very low, even when the internal combustion engine (ICE) is working. It makes my job easier and more comfortable.

Have you had any initial concerns about driving such a bus?

I was open to all options, I like driving so I was willing to try and learn about it.

Has your experience of driving a hybrid bus met your expectations? Are there any problems associated with it that you did not foresee?

We got a good training from MAN, so the initial experience was very positive. When you know how the vehicle works and you are aware of all the different specifications, you should not have any problem to drive it. In any case, I had no previous concerns about this vehicle.

The main obstacle is usually the size of the vehicle, but in this case the size is similar to those buses we already have, so I adapted easily.

Did you have any reactions or questions from passengers about the hybrid bus; did you notice that passengers react positively to the fact that the bus is hybrid?

They do react, and all reactions have been positive so far, comments such as “what a beautiful bus”, “how does it work?”. Users usually comment on how silent it is, and some ask about it’s technical specifications, it’s functionality, etc. It is fundamental to know how it works to be able to answer such questions.

In your opinion, what are the advantages / benefits of using hybrid bus compared to using a conventional bus?

Mostly the comfort when driving it in terms of low noise, lack of gearbox, etc. It is also very positive for the company, as it reduced energy consumption. For the rest, it is very similar to the other buses.

Do you have an idea of the amount of fuel saved with the hybrid bus in comparison to a conventional bus?

I think the better the performance, the higher the savings. According to the information provided by the company, we achieve about a 30% of savings in fuel consumption compared to conventional buses. But you have to know how to get the best of it. I think that there is still room for improvements.

In the buses of Dbus there is a driving aid system (sistema para mejorar la eficiencia en la conducción y la puntualidad en las paradas), which is one of the services (EV-efficient driving) that smartCEM project is testing. How does the system look and how does it work in Dbus with regards to eco-driving?

The system looks good and it seems practical. I think it still needs some adjustments for a better performance, but if it’s a beneficial tool for both the drivers and the company, we have to use it properly and improve it. I think it is especially useful for newly started drivers because it provides them with a very good baseline for the daily job.

It is also positive for other experienced but not “eco-drivers” to guide them to a more eco-driving behaviour.

In your opinion, is such a system useful? Can it help change driving habits and lead to efficient driving?

It depends on the driver, on the driving style. It feels like a competition, because you obviously want to drive good, so the more warning icons you get, the more concerned you get. Then you try to do your best to avoid such warnings.

Would you say that you definitely want to keep using this system in the future?

It depends on how it works, of course. I have some concerns about how the recorded personal data is going to be used, in terms of punishments and rewards. There are still some fringes to fix, but as long as it does not bother drivers or make their work more difficult, I think it is positive in terms of performance.

After driving a hybrid bus would you be eager to use a hybrid or even fully electric car in your private life? Why?

Yes, why not. The experience is positive. The current market is a bit high in terms of prices, but I like the system and I think it is good, both for drivers and for the environment.

The smartCEM Mobile Portal

In order to encourage the use of electric vehicles as part of everyday life, smartCEM runs pilots for five advanced Electric Vehicle (EV) mobility services: EV-navigation, EV-efficient driving, EV-trip management, EV-charging station management and EV-sharing management. All of them will also be included in the new smartCEM Mobile Portal to ensure easier access to all those services for the EV users.

Mobile Portal development

The mobile portal is currently being developed by Teamnet International, one of the smartCEM Consortium partners. Teamnet, a company focused on the delivery and integration of IT systems, started working on the portal in the autumn of 2012. It took approximately one year to build this complex system – it is foreseen that the portal will be launched by mid-December 2013.

Every user of an Android smartphone will be able to download the smartCEM Mobile Portal for free from the Google Play shop. The portal has been developed for only one platform (it is not available for iPhones) because this allowed Teamnet to fully concentrate on the app’s functionality.

What will the portal include?

The smartCEM Mobile Portal will look like a smartphone app. The title bar will contain three buttons: project logo, displaying project information; a refresh button; and a Twitter link that will allow users to share their EV-experience via social media. The main area will be the tab ‘control panel’. Each tab will include either a list of pilot sites or a list of smartCEM services. It will be possible to access descriptions of both the pilot sites and their services.

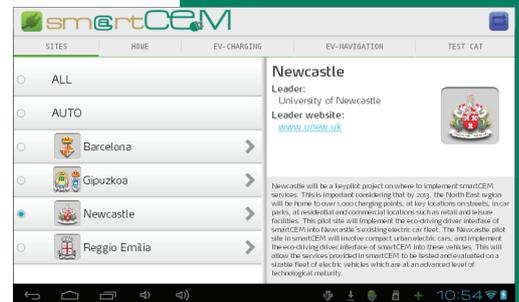
Choosing a service, for instance EV-charging station management, from the tab ‘control panel’ will lead to a display of different options for this topic. Tapping any of the list items will trigger the associated action: either launching another Android application or navigating to a website with more information. The Portal handles the download and installation of missing applications transparently, by checking the available smartCEM apps in a dedicated central database. Choosing a pilot site, for instance Barcelona, will result in a display of only those services that are available in this specific pilot site.

Why is this application so crucial?

The smartCEM Mobile Portal will gather all the smartCEM-connected-applications in one place, guaranteeing easier access to all the project’s pilot services. The users of one service will be able to get informed about other services accessible in their pilot site. The smartCEM Mobile Portal aims at making the project and its pilot services available to wider public.



EV-charging applications available in Gipuzkoa pilot site displayed on the smartCEM Mobile Portal



Pilot site, with the details of Newcastle displayed on the smartCEM Mobile Portal (landscape layout)

NEWS / EVENTS

CIP evaluation group represented at the Human Factors Europe Chapter Annual Meeting (HFES) in Turin

photo (right)

The Poster presented at the HFES meeting in Turin

Nicola Fricke (DLR) presented a poster at the HFES Europe Chapter Meeting in Turin (October 16-18th). The poster represented first ideas of the CIP evaluation group – members of the four pilot projects ICT4EVEU, MOBI.Europe, MOLECULES and smartCEM - on a common user-questionnaire to evaluate 1) the usage of electric vehicles and 2) the implemented services in the pilot-sites. In an iterative fashion the categories for assessment were agreed upon by the four projects. These categories are: demographics, attitudes and technology use, travel and mobility, willingness-to-pay, range-anxiety and user-acceptance. Furthermore, some questionnaire items for these categories were developed, e.g. for user-acceptance the Technology-Acceptance-Model by Davis (1993) was used to define items covering perceived ease-of-use and perceived usefulness of the services. The questionnaire shall be further harmonized amongst the projects and be used for comparing the results of the pilot-phases of the four projects.

Common user acceptance questionnaire for evaluation of CIP electromobility projects



CIP EM pilot projects
Four projects are funded within the Competitiveness and Innovation Framework Programme (CIP) from 01/2012-12/2014:
• **ICT4EVEU:** aims at integrating management systems operating in existing electric vehicle infrastructures
• **MOBI.Europe:** will test and evaluate services for real time information on the charging infrastructure, roaming between electric mobility operators and electricity retailers, smart managing of electric vehicle charging and vehicle sharing
• **MOLECULES:** car-sharing schemes for electric vehicles and seamless integration with other modes of transport will be demonstrated along with optimised trip-planning based on the energy use, state-of-charge and vehicle to grid connectivity.
• **smartCEM:** will demonstrate advanced mobility services – navigation, efficient driving, trip and charging station management – for electric vehicles.

Harmonisation of Evaluations
Goal
A comparability of the CIP evaluation results and CIP knowledge base for EM piloting
Approach
Harmonising the assessment/ evaluation tools, indicators and survey methods
• development of a common user questionnaire for EM uptake
• items are related to: 1) the usage of electric vehicles and 2) the implemented services in the pilot-sites
Applied Categories
The preliminary categories for user-assessment are:
• demographics,
• attitudes and technology use,
• travel and mobility,
• willingness-to-pay,
• range-anxiety and
• user-acceptance

Examples – user acceptance
General user-acceptance
What is your immediate reaction after completing your journey in an electric vehicle/scooter?
Based on your present impression, would you consider driving electric vehicle/scooters more often in the future?
Service-specific user-acceptance
Using the service made it easier for me to use an electric vehicle/scooter/the bus.
The service provided me with all the information which I needed to complete my trip.

Response scale
1=Very negative, 2=negative, 3=neutral, 4=positive, 5=very positive
1=No, definitely not, 2=No, probably not, 3=Perhaps, cannot decide 4=Yes, probably, 5=Yes, definitely
1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

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Collaboration with ICT4eveu in Gipuzkoa

smartCEM and ICT4eveu has held several meetings in order to open a collaboration framework between both projects. Last meeting was held in the EVS27 congress in Barcelona.



During this meeting synergies and cooperation possibilities were identified due to the complementary approaches of both project (smartCEM services are more vehicle and public transport oriented while itc4eveu services are more focused on reservation and payments of charging points) and proximity of two pilot sites (Pamplona-Vitoria and San Sebastián).

During this last meeting it was decided to explore different initiatives like:

- Extend the ICT4eveu electro mobility corridor (Pamplona-Vitoria) to San Sebastián (Pamplona-Vitoria-San Sebastian) and use charging points booking and payment systems also in San Sebastián pilot site.
- Use of different smartCEM services in the extended corridor or other ICT4eveu pilot sites:
 - ◆ Common APP
 - ◆ Blue-dash
 - ◆ Trip planner
 - ◆ Navigation
 - ◆ Post trip Eco-driving

smartCEM at EVS27 in Barcelona



Alongside a major exhibition, EVS27 showcases a renowned congress, a four-day symposium with a great number of presentations covering all facets of electric drive, including vehicles, energy storage, infrastructure, research and development.

This November, from 14 to 18th, academic, government and industry leaders gathered in Barcelona to explore, share and promote the development of electric vehicles and the technologies to transform the way we drive.

New this year was the Projects Dissemination, a section where professionals and experts were able to share their experiences and practices to an international audience of professional and decision-makers.

Thanks to this initiative, Rosa Delgado from Applus IDIADA, representing the smartCEM consortium, had the privilege of presenting the current status and objectives of the smartCEM project among many key electromobility stakeholders.

IDIADA had the opportunity of showing the relevance of the implemented services (EV Navigation, EV Efficient Driving, EV Trip Management, EV Vehicle Sharing and EV Charging Station Management), the four pilot sites (Barcelona, Guipuzcoa, Newcastle upon Tyne and Reggio Emilia) commitment with Electric Vehicles (EVs) and the different electromobility platforms and business models that conform the smartCEM experience towards user acceptance and broad deployment of electric drive throughout Europe.



SmartCEM is supported by the European Commission under the ICT CIP Programme (Competitiveness and Innovation Programme) with three other projects: ICT4eveu mobiEurope and Molecules.

Going Green had also a relevant role in the congress presenting MOTIT which is the electromobility service in Barcelona pilot site. MOTIT allows you to reserve a bike via web or smartphone. You can pick it up anywhere in the street and return it to any destination you want. You can rent the scooter by time or a distance. The bike is 100% electric and it has a navigator that will guide you to your destination. MOTIT introduces, under smartCEM scope, the EV Navigation, EV Efficient Driving and EV Vehicle Sharing services.

Photographs from the EVS27 in Barcelona

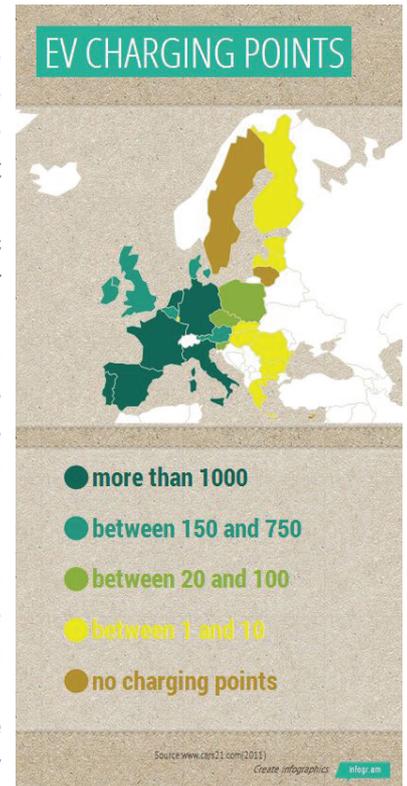
Photograph (right)
European map of EV
charging points

The EU calls for more EV charging stations

In January 2013, the European Commission published a Directive proposal to ensure the deployment of alternative fuels infrastructure accruing to common technical specifications in the EU. The proposal requires Member States to set a minimum number of electric charging stations, based on the current number of registered electric vehicles. In total, 8 million charging stations for electric vehicles should be set up in the EU by 2020. Binding requirements are planned for refuelling stations for hydrogen and liquefied natural gas (LNG) as well as for compressed natural gas (CNG). The proposal also aims at harmonising standards.

While the Commission is keen on implementing pan-European infrastructure covering alternative fuels, Member States are more reluctant regarding the mandatory targets and ask for more flexibility. The Council contested the figures provided by the Commission and asked for an implementation by 2030 instead of 2020.

The financing of the infrastructure remains a crucial issue and public-private partnerships are considered as the most suitable solution. The European Parliament Rapporteur Carlo Fidanza also suggested using EU funds, so as to support Member States to reach the targets of the proposed Directive. The proposal is now being discussed by the Parliament. The vote in plenary is foreseen for 26 February 2014.



The proposal requires:

- ◆ the introduction of common technical specifications and the establishment of minimum infrastructure for alternative fuels for transport, i.e. electricity, natural gas (CNG and LNG) and hydrogen, to ensure the market uptake by consumers of alternative fuels and the further development and deployment of the technology by industry;
- ◆ Member States to draw up national policy frameworks for the market development of alternative fuels and their infrastructure;
- ◆ each Member State to establish a minimum number of recharging points for electric vehicles by each Member State, with 10% of them being publicly accessible;
- ◆ the establishment, on the territory of Member States where there are already hydrogen refuelling points, the build-up of a sufficient number of points to allow hydrogen-powered vehicles to circulate throughout the national territory;
- ◆ that LNG refuelling points shall be built in all maritime and inland waterway ports, as well as routes on the Trans-European Transport (TEN-T) Core Network and defines the common technical specifications to be met by this infrastructure;
- ◆ that common information on fuels and their compatibility with vehicles be made available to the consumer at the pumps in all refuelling points, in vehicle manuals, and on the vehicles themselves.

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