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Marc GARCÍA

Technical Director, ATM (autoridad de Transporte Metropolitano de Barcelona)

Guido MULLER

EC DG-MOVE

Per GELLERT

Director Planning and Consulting, Movia Copenhagen

Tomás MELERO

Responsible of control CITRAM, CRTM

Tamas DOMBI

Coordinator of CAPRICE project, ZTM Warsaw

Marc GARCÍA

First of all, let me thank the Consorcio de Madrid, and especially Carlos, for inviting me to chair this session. I am happy to share this session because I know little about the session and will learn a lot. Secondly, let me again congratulate the Consorcio on its 25th birthday, and let us hope they continue to hold this type of event for many more years. This session is about ITS and mobility, and its purpose is straightforward, on the one hand to better understand the objectives of European policy on ITS and mobility, and for that purpose we have Guido Mullar, an international expert on ITS at DG-MOVE.

The second part of the session is about presenting and sharing with the European Commission, and also with all of you, some examples of ITS applications and implementations in European transport across the network, and for that purpose we have Per Gellert, Director of Planning and Consulting at the Movia Transport Authority, which is Copenhagen's PTA. We also have Tomás Melero, who is responsible for the CITRAM Control Centre at the Madrid Transport Authority. Finally, we also have Tamas Dombi, who is serving as Project Coordinator of the CAPRICE project and is head of international affairs at the Warsaw Transport Authority. The first presentation is entitled 'Clean Transport, Urban Transport and Intelligent Transport Systems,' and concerns the guidelines and

key messages on European policy on ITS and mobility, along with its goals and priorities in this area and what the EC wants to implement in this area.

Guido MULLER

I am from the European Commission, and as you know we work on European integration, which is quite a hard job. I also know that CTM has been working on the integration of the different transport modes and players, so I congratulate you also from our side in Brussels. I will talk mainly about intelligent transport systems because I work in the intelligent transport systems team or unit of DG-MOVE, Mobility and Transport, in the European Commission.

A lot of you will think that ITS is just a term for roads, and it has been for a long time; European policy was geared towards roads for a long time, but it is changing. We are now doing much more in terms of multi-modality, not only in ITS but also in general mobility policy, and I do not know how many of you have seen the new white paper the Commission published on Monday. The white paper is only published once every ten years, so it is quite an occasion; it lays down the main principles for European transport policy for the ten years to come, and has a vision up to 2050. I am sure there will be quite a lot of discussion, and so far it is only a collection of ideas, but it also gives you a flavour of what the Commission is aiming for.

I think the public transport and urban communities can be quite satisfied, because there is a lot of reinforcement of urban transport in this paper, and the Commission has also understood that public transport must be part of the solution, as Mr. Flausch put it earlier. You will see some references to seamless door-to-door transport, especially when it refers to information and ticketing, and that already refers to the ITS part of it, but also to urban mobility plans. For instance, here you have the idea of comparing different cities in a so-called European mobility scorecard. Another interesting idea is to link European funding, especially in terms of structural and regional funding, which give a lot of money to the regions, more to the notion of having integrated, sustainable urban mobility plans.

I will tell you a little bit about the ITS action plan and the ITS directive, which are two different things but in the same policy area, but I will focus on the activities which are urban and public transport related, because there are lots of other things in there, and because I will not have the time to give all the detailed background to this, I will be pleased to answer your questions.

The ITS action plan which came out in the end of 2008 is a communication by the European Commission; you have to understand first of all that an action plan is only binding for the European Commission itself, it is our own work programme, so to speak. We have 26 different measures in six different action areas, and our goal is to accelerate the coordinated deployment of intelligent transport systems and increase interoperability, which is always a big principle on the European level, because we see quite a patchwork of different solutions; we see a lot of local authorities who are developing a lot of good things; we see a lot of regions who are developing good things; but we also see some regions and areas who are not developing anything at all, so it is quite difficult. For example, regarding truck tolling systems, we have different toll systems in a number of countries, and it is quite a lot of work to harmonise and integrate these, because right now if you want to go from Czechoslovakia through Austria, Hungary and so on, you would need three or four different boxes in your truck for paying the tolls, and that is not something we would like to see in an integrated market.

I will only pick a few things we are doing with regard to urban transport, and one is action with regard to information, because we have a multi-modal focus. We see a dynamic market developing and we see very dynamic technical development, but we also see an increasing demand for European services, something that is going beyond single regions, and we also see a demand for multi-modal services. There are some players, especially from the private sector, who are trying to build European services, not only for the road sector and navigation systems but also for public transport.

The European Commission has several objectives, one being that there should be fair and transparent access to the public data, because so far access is a problem; there is a lot of data around, and while the possibilities are

getting better and better, it is not easy to see who has which data and how to get it if you want to build a service that integrates different areas. Therefore, we need to promote public-private cooperation in this area, to improve data quality, to improve multi-modal cooperation, and we want to encourage cross-border exchange.

We have so far one a one-year study on this issue, to be published quite soon, where, though this is not yet the European Commission viewpoint, there is a proposal for some kind of framework for an electronic marketplace for data, where there is some kind of registry, there different licences for exchanging data, and which is quite transparent and non-discriminatory, so all those interested in data are treated in the same fair manner. We would need a little regulation, but it would be very light in terms of the marketplace and how the exchange could function. It would, of course, be your own decision whether to take part in this marketplace, if we were to have something like that.

Another action is the multimodal journey planners. We support the development of national multimodal journey planners, and we would like to see them connected EU-wide. We know from different studies and EU-funded projects that we already have a good basis, with 30 member states already having some kind of door-to-door journey planner on the web in different organisations, sometimes government funded and sometimes by different transport operators. There are several others who want to build something like that, and I know that Spain has some legislation on this. We think that an EU-wide solution can only be created in the form of some kind of distributed system, so we will not have a centralised European journey planner because that would be too difficult to organise and inefficient.

We started an ongoing study in January of this year to assess the technical possibilities and existing standards we have, and there should be consultation with stakeholders, and this is coming up in the near future in the form of a web consultation on multimodal journey planners during April and May. There will be a workshop on 20 June 2011 in Brussels on this topic, where the study will present the first interim results. This will be done in preparation of the specifications, which I will come to later when I talk about the ITS directive.

We also fund some research projects, and there are some new proposals which are currently under evaluation by my colleagues in the research department and the ITS department. We also have a new group, called the urban ITS expert group, and this is an action mentioned both in the ITS action plan and the urban mobility action plan. This group was formed with the help of the different associations working in the field, because we wanted to have experts at the local level, as it is for the urban areas, and we wanted to have expertise from the different associations. There are several experts from EMTA, UITP and from Madrid, and the expert group has three tasks. This group will be working for two years, having started in December. The first task is to collect and exchange best practice in the field of ITS for urban areas, and the second and most important is to work on guidelines which will be issued as supports. These guidelines will not be binding, though they will be issued as official European documents; they are just support documents, with the aim of determining if more standardisation is needed.

The four main topics the group is working on were identified both in a consultation we held, but also during a workshop we did last year in Brussels. These are traffic information, which is multimodal, smart ticketing, traffic and access management, and ITS for urban logistics, but only the ITS part of it. We now have 25 members in this group, and have created teams to work on the different topics. The associations, such as EMTA and UITP, are in the information loop, so they will receive the information, along with many of you. Our ITS committee and advisory group will also be in the information loop.

The work is more or less geared towards 2012, by which time we would like to have an interim report on best practice and also on the guidelines, though the formal documents will only come at the end of the work. We are holding three meetings per year. Therefore, that is the status of the group at the moment.

I cannot deal in detail with the other topics connected to urban transport; I just wanted to mention the ITS knowledge toolkit, which is an application we are now developing as part of a research project. Here you can enter a problem such as congestion, and then it gives you the different possible ITS-related solutions, but also some evaluations, examples and cost benefit data, all things which are normally difficult to get but which you need as a practitioner. Our team which is working on this project has collected 1,200 research reports of

varying quality, and they are now building the search engine into the toolkit; they will present the beta version on 20 April. There will be a few months of testing, which you may participate in if you are interested, and we will probably have the final toolkit in September-October this year.

I also want to mention ticketing, where we had a project on interoperable fare management and in which UITP was very much involved. They now have a roadmap towards interoperability, but they also tried multi-application smart cards which could link the French, Belgian, German and UK systems. Harmonisation is difficult in Europe because everyone has already invested in technology, but an intermediate step being proposed is to have a smart card for your region, because that is where you need it, but then if you want to go somewhere else you could just go onto the Internet and download the application for London, Madrid for anywhere else and use your smart card there. That is quite interesting, and it is technically possible, but there are of course organisational and legal issues; there has to be trust, the standards have to be developed further, and there needs to be a good network. The next step would be to try to roll this out.

We have done our own study, which was more like a desktop study rather than an experiment, on the current status and recommendations for EC action, and this study is also complete and will be published quite soon.

Finally, I will say a few words about this ITS directive, which you may have heard about because it has been in force in August 2010. This directive gives a framework for the coordinated and effective deployment and use of ITS. It mainly deals with road transport, but also with interfaces, where we deal with public transport. The main objective is to develop specifications, and the nature of these specifications is sometimes quite difficult to understand; these will be developed by the Commission in collaboration with the member states, there will be an impact assessment, and then, if they have the specifications, the member states will be obliged to use them if they have or want to build a service like this. However, they do not have to deploy this system, so member states can still decide on their own if they want to invest in certain systems, but if they build a system which has a European specification, then they have to use it.

Therefore, that is one way to get to harmonisation over a number of years, as it will take some time, while still giving the member states and the local governments of the regions the freedom to invest in the ITS that they need. There is also a time plan, because we have only six priority actions right now, three of which are related to information and also to the urban level. Regarding the others, we have e-callers for vehicles, one for truck parking on motorways, but the more interesting ones are coming up in 2013-2014, with real time traffic information, which is also more road traffic oriented, and multimodal traffic information for the end of 2014. The deadline for multimodal is quite late, not because it is not a priority, because everybody was really interested in it in the member states and also in the European Parliament, but it is quite difficult because we have to listen to a lot of different stakeholders in this field, so it is much more difficult if you only operate in one sector.

We will in the end have two bodies within the directive to support the work of the European Commission. One is the Committee of the Member States, a very formal commission with one person for each member state, which was established in 2010 and has already looked over the work programme of the Commission, for instance the deadlines and the reporting guidelines, because the next step in the directive will be a national report on ITS which is due in August. We will also have a European ITS advisory group as a stakeholder forum.

The local and regional authorities are included as well, but this group will be limited to 25 people, and we have to ensure that we have a good geographical spread over the EU. However, we will have an open call for interest in April, and this group is quite a high level, though not a top level, one, so it is not being chaired by Vice President Kallas, but there will be someone at the director level, because there should be someone who does some decision making from the organisations. They will advice on business and technical aspects and bring the stakeholder interests into all the topics of the directive.

Marc GARCÍA

The next presentation is on the latest developments in SMS ticketing in Copenhagen, presented by Per Gellert.

Per GELLERT

Thank you very much for the invitation to come here today and speak about our experiences in SMS ticketing. This morning you heard about a lot of big projects and billions of euro; now you will hear about a small project, and I will only talk about millions, but nevertheless the effect of a project like this is quite positive.

First of all, why do we think about mobile phones in the context of public transport? Some of the speakers this morning already talked about it. It is significant that most of our customers have a mobile phone in their pocket, so firstly it is a very cheap infrastructure for a public transport company. Secondly, everything is in real time, so there are a lot of possibilities for using this mobile phone in the customer's pocket. One of these is the contribution to removing the cash sale from buses; so if we could take away the possibility of buying a ticket on the bus, we could save a lot of money. Therefore, SMS ticketing is only one function for which we use mobile phones.

I will look at our pricing system so that you can understand what I am talking about. We have a zoning system, so you can buy a cash-ticket, and while we are a lot smaller than Madrid, our prices are a lot higher. There is the EUR3 single ticket, the ten-trip pass which is slightly cheaper, the monthly pass, and we are currently rolling out a new smart card system, so the system is moving all the time. However, it is a zoning system, and that is the important thing.

What do you do to buy an SMS ticket? You take your mobile phone and send an SMS to 1450, and you write either the name of the station or the number of zones; if you know the zone you are in you can just state the number of zones. You get back a new SMS which is your ticket, so it is quite simple. When we started in the beginning of 2009, we saw a steady increase in the number of users, but as is often the case these were the first movers, so for a long period nothing really happened, and we thought we needed some kind of campaign to boost SMS ticketing.

We created a campaign 3-4 months after the introduction of SMS ticketing; we wanted a lot of new customers for evening travel, where it would not cost much extra in terms of capacity, we wanted the existing customers to travel more, and above all we wanted to get customers to use the SMS ticket. Therefore, we proposed a ticket for DKK20 where you could travel through the whole system after 7 pm in the evening. That was the campaign; if you had to pay cash to travel in all of the zones, you would have to pay DKK100, so it was a fifth of the normal price.

We ran the campaign for three months, and then asked our customers what they thought of it and what the main benefits of using it were. Most of the customers said, of course, that it was cheap; 50% said it was easy and accessible, as well as uncomplicated to buy because they did not need to carry cash or to think about the number of zones. We asked whether they would have made the trip if they had not had the SMS ticket; this is always a very difficult question, but 15% said that they would not have done so without the offer. We asked whether the introduction of this ticket had given public transport a more positive image, and 20% said it was much more positive and 55% said it was more positive. Therefore, this has had a very positive impact on our image, and this is something we often struggle with in public transport.

When we came into the summer period we decided to have another campaign, because in summer we have a lot of free capacity, and decided to use this to reduce the price of the ten-trip card, also using SMS. The objectives were the same, the principal one being to get the customers to use the SMS ticket. We ran that for two months during the summer period, and again asked the customers whether they had used SMS since it was launched in 2009. The interesting thing is that almost 30% said they had never used an SMS ticket before, so this campaign got them to use it.

We asked about the level of satisfaction, and 55% were very satisfied, 35% were satisfied, meaning that 90% of customers were either satisfied or very satisfied. We asked whether the trip card would increase their use of public transport, again a very difficult question, because people tend to say yes because they want to be nice, but in this survey 30% of customers said they would take more trips. The interesting question is whether it did increase the number of trips, and when we started introducing the normal SMS ticket, the number sold grew

steadily, but when we introduced the first campaign it just boomed, going up to over 140,000 SMS tickets per week. The fact that we had the campaign also meant that sales of the normal SMS ticket, the more expensive one, increased.

Regarding the summer trip card, normally we would see a very steep decline in the number of tickets during the summer period because we have fewer customers, but again this campaign persuaded a number of passengers to use SMS ticketing. Since then we have been able to maintain a high level, and it is continuing to increase; we are now introducing the SMS trip card permanently, and now we are on 80,000 SMS tickets per week.

The financial figures are always interesting. The total sales of SMS tickets in 2010 amounted to EUR14 million, and the share of SMS tickets was a third of all single tickets sold. This has an impact, because the driver does not have to sell the ticket, as you have it already, having bought it before entering the train or bus.

One of the interesting things about SMS is that there are some operational costs, because phone operators, banks and software providers are involved and all take their share of the revenue, amounting to 9% of the income from each ticket. Now that we have introduced the ten-trip card, we expect the sales to be EUR37 million, representing around 20% of trip cards sold by mobile phone. Therefore, altogether we expect EUR50 million in income from SMS tickets in 2011.

Just to jump to the conclusion, SMS tickets have been a very big success, and the biggest factor in this is that it is considered modern and has improved Movia's image to a great degree. Young people are just using this and not thinking about the price, because their parents have to pay for this ticket. It has generated new customers; it is difficult to say how many new customers we got from this, but there is no doubt it has happened. The SMS ticket has taken a substantial market share of ticket sales in a very short period, so that is impressive with a third of tickets already being SMS tickets. They save time because the driver does not have to handle the tickets, people already having them when they enter the bus. We will at some stage remove the possibility to buy tickets from the buses, and then we will really save some money, both in terms of travel time and in ticket handling.

Finally, one of the biggest newspapers in Denmark annually nominates the best service of the year, and tomorrow it will be decided that the SMS ticket will win this nomination. It is in competition with a wine bar and the Tivoli service personnel, so this is quite a good thing; this nomination is the result of the readers of the paper.

Therefore, this has been a very big success, and it is a very cheap project compared to some of the other things we heard today, so I can only recommend that you do this. Thank you very much.

Marc GARCÍA

Thank you Per, for this interesting talk. Let us move to the next talk by Tomás Melero on ITS integration in Madrid's public transport system; he will talk to us about the CITRAM Control Centre.

Tomás MELERO

Buenas tardes, muchas gracias por dar la oportunidad de explicar lo que se está haciendo desde el Consorcio en integración de sistemas de información de transporte.

Efectivamente, en principio la presentación se enfocaba más a lo que es el puesto de control, pero yo creo, que con buen criterio, pues, se ha abierto un poco esa visión y hemos integrado la parte que están desarrollando otras áreas dentro del Consorcio. Así que agradezco desde aquí a Antonio Rubio, Isabel Retuerto, que son compañeros que están desarrollando. Me ha tocado a mí ser el portavoz, pero en realidad lo que se va a presentar es lógicamente, un trabajo de equipo.

Y, en segundo lugar, la verdad es que bueno, visto la primera presentación y hacia dónde van las tendencias, pues me agrada mucho poder hacer esta presentación porque creo que está bastante en línea con lo que se ha presentado y con lo que va a ser el futuro o la concepción del futuro de los sistemas inteligentes de transporte. Trataré de no hablar muy alto para respetar el periodo de siesta, pero quizá en algún momento rompa esa tónica para remarcar alguna de las ideas que me gustaría mostrarles a Uds.

Bueno, como han visto esta mañana el Consorcio desde hace 25 años está trabajando principalmente en todos los temas de integración, la integración administrativa que es la naturaleza del Consorcio, realmente su naturaleza es su ser. Sin integración administrativa simplemente el Consorcio no existiría. Pero además, desde esos 25 años, se está trabajando duramente en conseguir la integración tarifaria, la integración modal. Como veis, me he atrevido a poner ahí un nuevo escalón que creo que es una apuesta de futuro, que sea la integración tecnológica. La tecnología no es transporte pero yo creo que a nadie se le escapa que a día de hoy pues está tan involucrada en todos los aspectos de la vida que yo creo que cuando ganemos la integración tecnológica ayudaremos sin lugar a dudas, al resto de integraciones que persigue el Consorcio.

Y cabe preguntarse el por qué. O sea, si realmente esa integración tecnológica tiene algún sentido. He traído un par de reflexiones apoyando la tesis lógicamente, de que efectivamente la integración tecnológica tiene lógica, tiene ser, es importante y se debe apostar por ella. El primero de ellos es que, realmente a día de hoy el sistema de transporte no es, no son modos de transporte uno tras otro, sino que realmente es un sistema integrado y de hecho, la mayoría de los usuarios del sistema de transporte son usuarios multimodales. De hecho, el 43% utiliza más de un modo en su desplazamiento habitual pero aquel que no utiliza más de un modo en un desplazamiento, sobre todo aquel que tenga el abono transporte, pues es absolutamente transparente utilizar hoy el Cercanías y mañana hacer ese mismo viaje en otro modo de Transporte Público como el autobús interurbano.

Por otra parte, y además yo creo que para que el Transporte Público siga evolucionando, tenga sentido en un futuro, ganemos cuota de mercado a fin de cuentas, pues hay que orientarse a cuál es la percepción de los usuarios, la calidad en el servicio. Y en ese sentido yo creo que a nadie se le escapa que los sistemas inteligentes de transporte, sobre todo los temas relacionados con la información, con el confort, son algunos de los parámetros a los que los usuarios son más sensibles y por los que los usuarios deciden mantenerse como usuarios de Transporte Público o migrar a otras formas de transporte.

Y, además, en esa apuesta por la integración pues, y en la línea de lo que hablábamos nuevamente en la primera presentación de lo que nos presentaba Guido, es de altísimo valor o está realmente muy, un servicio muy demandado, el conseguir dar información multimodal en tiempo real. Y sinceramente la visión de cada uno de los operadores lógicamente, mejoran o están mejorando a pasos agigantados en estos años en dar esa información para sus modos propios, pero la integración permite crear una red multimodal o un espacio

multimodal de información en el cual recibas no sólo las del modo en el que en ese momento te estás transportando, sino el siguiente paso del viaje o incidencias que puedan afectar a tu ruta desde el origen hasta el destino.

En un segundo estadio, la integración tecnológica, además, creo que a día de hoy es esencial para mejorar las otras dos integraciones de las que hablamos. O sea, la integración modal, sobre todo a nivel de armonización, ahora lo vamos a ver con el Plan de Modernización de Interurbanos, la parte del Plan que corresponde a las nuevas tecnologías. Como decía, la integración modal o la visión integrada de los sistemas de transporte permite avanzar hacia una armonización entre los distintos modos, para que no haya escalones y diferencias en el nivel de desarrollo de las nuevas tecnologías, según el modo de Transporte

Público del que estemos hablando; y por otro lado, a nivel tarifario lógicamente, pues se aumenta la flexibilidad, las posibilidades, rompe el marco que conocemos de integración tarifaria y abre nuevas posibilidades de personalización de tarifas, de zonas, de modos de pago, etcétera.

En relación al tema de tarifas, desde el Consorcio se está desarrollando desde hace unos años lo que es la tarjeta sin contacto. En ese sentido, el papel que está tomando el Consorcio es el de aquel que define, desarrolla y documenta tanto desde el punto de vista funcional como desde el punto de vista de seguridad, cuáles son los requisitos que debe tener ese sistema. Lo que se llama la tarjeta VIP. Como veis, ahí al final se representa como una pieza, como una serie de piezas que forman un puzzle, en el cual, bueno pues lógicamente hay una serie de agentes involucrados: las redes comerciales, los desarrolladores de las validaciones, aquellos que fabrican las tarjetas, o los modos de pago que sean en su caso, las máquinas necesarias para poder hacer la inspección. Y en el medio están los protocolos de seguridad o los desarrollos de seguridad y de funcionalidad que es donde el Consorcio adquiere el papel principal.

Cada una de las aplicaciones que se desarrolla conforme a los requisitos que el Consorcio ha establecido, y así como los equipos que vayan a formar parte del proceso de validación de "ticket in", pasan por un centro de conformación: Centro de Desarrollo y Conformidad, el CDC, donde se ve que efectivamente, cumplen con esos requisitos que dan, tanto funcionalidades como la seguridad requerida, y se firman electrónicamente. Con lo cual, a partir de ese momento digamos que obtienen el certificado, aprueban las notas y pueden incorporarse al sistema de "ticket in" del Transporte Público de la Comunidad de Madrid.

Por otra parte, en lo que es esa integración o esa ayuda a la homogenización de tecnología en la integración modal, se está ahora mismo desarrollando el Plan de Modernización de los Autobuses Interurbanos.

En el campo de las nuevas tecnologías, pues los requisitos que ha establecido el Consorcio para los próximos años, se van cumpliendo plazos, depende del requisito pues será finalización de 2011, 2012, 2013. Entre ellos está que todas las empresas operadoras de autobuses interurbanos deben de tener un SAE; que los sistemas, lógicamente de "ticket in" de esas mismas de Transporte Interurbano deben ser capaces de funcionar con la tarjeta sin contacto de la que hablábamos antes; que se debe de procurar tener en la calle pantallas donde se pueda dar información en tiempo real. Hay un compromiso de poner 600 paneles donde se pueda dar información en tiempo real. Y me adelanto un poco, información que además se pretende multimodal, lo veremos cuando se hable más en detalle de lo que es el puesto de control central. Y lógicamente están obligados a que estos desarrollos se puedan integrar dentro de lo que son sus centros de control locales, de cada una de las empresas, pero también dentro de lo que es el centro de control central del Consorcio de Transportes. En el caso de interurbanos podría ser el CCI, Centro de Control de Interurbanos, que se integra dentro de un proyecto más amplio que es el CITRAM, el centro a nivel regional.

Nada, vaya, disculpad porque… vale, se me ha olvidado quitar la animación.

Básicamente la idea es que esta renovación de interurbanos pues alcanza, dada la flota y la amplitud de la Red de Interurbanos de la Comunidad de Madrid, alcanza cifras realmente importantes. Lo que estamos hablando es que el cambio significa que en cada uno de los dos mil autobuses, pues van a tener que montarse a bordo CPUS con capacidad para gestionar lo que ya gestionaban, más toda la parte ligada al SAE, la parte ligada a los sistemas de emergencia, los pisones de emergencia que tienen todos los autobuses,

la parte ligada al "ticket in" con los nuevos desarrollos y la parte de equipamiento embarcado, como pueden ser pues las propias pantallas de información, etcétera. Y además de gestionar todo eso internamente tienen que ser capaces de comunicarse con cada uno de los 30 puestos de control central. Cada uno de esos puestos de control, sería uno por empresa operadora. Y, además, tienen que ser capaces esas empresas de dialogar con un centro de control centralizado -valga la redundancia- que sería el CITRAM CCI que mencionaba antes. Y hacerlo en tiempo real, de manera que podamos seguir la operación de los distintos operadores en tiempo real y además, ser capaces de servir información a los usuarios del transporte interurbano. Igual, para que os hagáis una idea de lo que estamos hablando pues son alrededor de 500 líneas, son más de 20 mil paradas y en varias de ellas, en las más importantes se pretende poner paneles de información con esa orientación multimodal de información al usuario.

Y por otra parte, está lo que sería el puesto de control central propiamente dicho, que, como veis, recoge la información de interurbanos, o recogerá la información de interurbanos conforme el Plan de Desarrollo, el Plan de Modernización sea una realidad pero, a día de hoy, ya está recogiendo la información del resto de modos de transporte. Es decir, nos sirven datos, como aparece ahí, recogemos esos datos, los centralizamos, lo convertimos en información y el reto es servir esa información a aquel que le pueda ser de utilidad. O sea, convertirla en conocimiento, trasladarla a cada uno, distribuirla en función de sus necesidades.

La filosofía de ese puesto de control es que no hacemos nosotros el desarrollo de las distintas aplicaciones. El desarrollo de esas aplicaciones lo han hecho y lo han hecho muy bien cada uno de los operadores. O sea, el puesto de mando de Metro es un ejemplo para todo el que lo quiera ver, el puesto del SAE de EMT es lo mismo. Lo que hacemos es recoger las señales que tienen ellos, especialmente orientadas a su operación y a su mantenimiento, y convertirlo bajo una óptica multimodal y mediante herramientas y plataformas informáticas, convertir esa información, que viene desagregada por modos, en una información realmente multimodal. Y esa información se recibe, las aplicaciones las vamos a ver pero muy rápido por falta de tiempo. Esas aplicaciones están residentes en lo que es el Puesto de Control Central, desde donde se hace la gestión de la información, se recoge -como decíamos- los datos, se convierte en información y se distribuyen a quien tenga interés en ese momento. Para ello está en desarrollo el establecimiento con cada uno de los distintos operadores, pero también con emergencias, también con operadores o partes ligadas al transporte que no es Transporte Público, como puede ser Dirección General de Carreteras, AENA, se están estableciendo -como decía- protocolos de acción. Si ocurre tal cosa, ponía un ejemplo, lo que pasa es que me lo voy a saltar por falta de tiempo, pero poníamos el ejemplo de que se cerrase el espacio aéreo. Pues el protocolo de actuación haría que se distribuya esa información a los operadores Metro, autobuses urbanos, autobuses interurbanos, se ponga en los paneles de intercambiadores que aquello está ocurriendo y se mantenga viva durante el periodo de crisis los canales de información entre todos los afectados.

Bueno, como el desarrollo, como explicaba, es bajo una óptica multimodal, el CCTV intermodal busca el tener dentro de una misma aplicación los CCTV tanto de Metro como de tranvías, como de intercambiadores, lo veis un poco en estas pantallas, donde se ve DGT, autobuses urbanos, Metro, tranvía, etcétera, en esa misma idea pero reflejando lo que es la localización de vehículos y la localización de incidencias, se ha desarrollado una aplicación que es el supervisor gráfico; hay una base de datos, igualmente multimodal donde se van recogiendo afecciones, incidencias pero también sugerencias, tema de cancelaciones, etcétera;

y otras aplicaciones que lo que nos permiten, porque hemos hablado mucho de relación entre operadores y Consorcio, entre otras entidades y Consorcio, pero al final esa información queremos que drene y llegue hasta el usuario final del sistema. Y, por tanto, también se están desarrollando y se han desarrollado herramientas para poder llegar hasta los paneles de información, en este caso veis de intercambiadores, se está desarrollando para poder llegar a los paneles de información de EMT, y en el Plan de Modernización para poder llegar con información multimodal desde el CITRAM hasta los paneles de información de interurbanos.

En el caso de intercambiadores, yo creo que es donde está más desarrollado, también se sigue en tiempo real cómo están las instalaciones, ascensores, escaleras, etcétera, el ejemplo me lo salto y explico simplemente cómo está la situación actual.

Se han establecido ya toda una serie de contactos con los que se han identificado como agentes involucrados tanto en lo que es el transporte, como desde un punto de vista más general –perdón- el Transporte Público y como desde un punto de vista más general: la movilidad, y el nivel de integración es el que aparece en este gráfico. La integración con intercambiadores se ha completado, con los autobuses de EMT es prácticamente también completa. Compartimos las herramientas incluso de identificación de incidentes, afecciones, etcétera. Lo mismo ocurre con tranvía y Metros Ligeros. Con Metro estamos en pleno desarrollo de esas integraciones; con Cercanías, que como sabéis no está dentro de la órbita de competencias del Consorcio pues estamos dando los primeros pasos, porque desde luego hay una acogida, ven la importancia, el valor y la relevancia de tener esta información centralizada, y se están dando pasos para llegar a algún punto de integración. Y esta patita aquí con los interurbanos, pues ya he explicado por qué está en rojo, esperemos que ese rojo dentro de breves años pues sea un verde.

Y lo último que os quería mostrar es nuevamente que detrás de esta integración entre modos y de puesto de control central quien realmente está son los usuarios del sistema. Y en ese sentido hay algunos pasos que ya se han dado y otros pasos que se tienen que dar y que seguiremos dando con el apoyo de las nuevas tecnologías de información.

En el caso de cosas, de proyectos que se han realizado pues ahí estuvo muy activo el área de Proceso de Datos en la salida del sistema de Transporte Público de Madrid a *Google Transit*, de manera que tenemos un planificador de rutas multimodal. Y en cooperación, por ejemplo, con Metro Ligero Oeste, pues hemos desarrollado conjuntamente un sistema en el cual reciben la información del próximo paso por parada, pero reciben también la información de incidencias en la red de transporte a las que puedan afectar. Es decir, el 70%, más del 70% de los usuarios de Metro Ligero Oeste son posteriormente usuarios o bien de la red de Metro o bien de los Cercanías. Y tener información en tiempo real de que tu tren viene en tres minutos pero además hay retrasos de 10 minutos en la Línea 10 es realmente relevante.

Los próximos pasos: una vez que tengamos esas integraciones suficientemente maduras, la idea es empezar a salir con líneas de suscripción. De manera que se pueda, cada usuario personalizar la información que quiere recibir, de qué ruta quiere recibir la información, en qué días le interesa recibirlo, etcétera. De manera que ellos puedan tomar la decisión de viaje, teniendo realmente una información real, relevante y a tiempo.

EN: Good afternoon my presentation in fact has evolved from the focus on the control center itself to the wider scope of a large use of it trough the Consorcio. This is a team work thanks to Antonio Rubio and Isabel

Retuerto.

This enlarge vision is in line with what I think is the future of Intelligent Transport Systems. Along the presentations this morning you've seen The Consorcio is all about integration: integration at the administrative level but also tariff integration and modal integration. My job here is to bring the technological integration that will serve all other integrations.

Why bring this integration? First of all because the various modes of transport need to be considered as a system: a large part (43%) of the users of the network in fact ride on different modes successively, they are multimodal users.

Also, if we are to increase the share of public transport, then quality is essential and among the criteria, travel information is very important to keep our customers.

In fact they're asking for multimodal real time information. It is true that operators are doing spectacular progress in delivering such information but each of them for their own modes. Integration allows to create a dedicated space of multimodal information where the passenger can not only get information on his actual leg of journey but also plan for the following one and especially in case of disruptions. Secondly, the modal integration eases the way to a harmonization of the different modes, while technological integration allows more flexibility for example tariff individualised or new ways of payment.

Speaking of tariff the Consorcio is developing the contactless card with the particular role of defining the functional and security specifications of the system. Different tasks are involved the commercial network, the validation equipment, the card suppliers, up to the special device to operate the control

Each of the applications is developed in line with the Consorcio specifications. For example the devices that allow the validation process "ticket in" go through a specific center of "Compliance and development " which guarantee both the functionalities and the security. Then they can be used in the Public transport system of Madrid
Also this technical integration applied to modal integration is also helpful with the Interurban Buses Modernization Plan.
The implementation will spread over 2011-2013. Every operator of inter-urban buses will have a SAE, contactless validators on board and the bus stops will be equipped with real time information screens (600 are planned). The Center for Inter-Urban buses Control will then merge in the future at regional level with the CITRAM
We're talking here of a large fleet of 2000 buses, 500 lines and some 20000 stops. Each bus company will have its Control center (30 in total) which will be able to communicate with the Central Control Center

The Metro Controle Center is an example of good achievement, also the Control Center SAE of EMT (municipal bus operator is another good example. The Central Control Center in fact gathers their information and data and then we translate them or circulate them (including emergency information) or even data from road traffic) so that it can be used at best. The objective is that in case of a disruption let's say for example the air space is closed, then following a planned protocol, all networks of metro, buses inter-urban buses and hubs/ major connecting stations will see the information displayed on their screens and the update related information all along the disruption occurs.

From the point of view of safety and security, the CCTVs also bring information on the actual location of the transport modes, the possible incidents etc..; everything is collected by the Central Control Center hence the prominent role of the Consorcio but of course at the end we want the info to be available to the passengers, the ones who need it.

We have taken steps with the suburban rail network (Cercanias) for the time being not in the scope of the Consorcio's authority. Their integration in the process would be of much relevance to the passengers;

Finally we've been active in the new ICT and the process of bringing the Public Transport System of Madrid available to Google Transit so as to get a real multimodal travel planner. The next step will be to offer

subscription to the passengers to get individual information on their preferred/usual modes and routes and empower them with real time information so as to make the instant best choice

Marc GARCÍA

Thank you very much, Tomás, for your comprehensive presentation. The last talk of this session is by Tamas Dombi from ZTM Warsaw. The title of his talk is 'The Cross-Border Travel Planner between Warsaw and Berlin,' giving a real European dimension to the cross-border travel planner.

Tamas DOMBI

I am honoured to talk to you about the CAPRICE travel planner and the CAPRICE Project. I have some bad news; after presentations about projects costing hundreds of millions of euro and Per Gellert's talk about SMS ticketing costing a few million, I will talk about a project costing a few hundred thousand, so we are going down, but I hope you will find it interesting.

I will start by introducing you to the CAPRICE Project and the Warsaw Public Transport Authority, then say a few words about the implementation and how it went in our company, and then finally will give some conclusions, including what we are doing in terms of follow-up. CAPRICE is an acronym for Capital Regions Integrating Collective Transport for Increased Energy Efficiency, which is quite a long name with everything in it; we use only CAPRICE and I would not remember the whole name. The main idea was to exchange experiences and good practices among five European metropolitan areas for three years from mid-2008 to summer 2011, so the project is nearly at an end.

It was a project which was funded by the programme Interreg IVC, a progamme for inter-regional projects funded by the European Regional Development Fund, and the participants were public transport specialists from five European metropolitan areas, Paris, Berlin, Vilnius, Bucharest and Warsaw. I am very happy that four of the five participants are here with us, and that we can continue this cooperation in the EMTA association.

The main goal of CAPRICE was to improve the public transport systems of the participating areas by exchanging best practices and experiences via two pilot implementations. The exchange of experiences took place during seven thematic workshops, all of which are behind us already and were very fruitful. We have learned a lot, and a best practice guide has been published where the experiences and best practices identified during the project and in our meetings have been published.

The most important pilot implementation for us was the travel planner, about which I will say a few words in a moment. Some of the other outputs included the good practice guide, which includes the policy recommendations as well, and two weeks ago the final conference was held in Paris.

I will say a few words about our authority. We are the public transport authority for Warsaw, founded in 1992, so we are younger than Consorcio de Transportes, *but next year will be our 20-year anniversary. The main responsibilities are timetable planning, service contracting and controlling. We set the fares for Warsaw public transport, we control the tickets and issue them, and the most important aspect is passenger information, which I will talk about in more detail in a few minutes.*

The public transport network in Warsaw consists of more than 1,000 km of bus routes, 125 km of tram tracks, because we had the luck, in contrast to many European cities, not to have cancelled the tram network in the cities, so the Warsaw tram networks have a history of over 100 years. The metro is quite young, because it has existed only since 1995, and it has only one line of 23 km, but on the other hand we have a very broad railway network which consists of seven lines serving all directions leaving Warsaw and which we are trying to integrate with the rest of the public transport network, because this was not the case earlier.

2.5 million passengers use Warsaw's public transport system every day, which gives us a modal share of more than 60% of motorised journeys, a result we are quite proud of, and we intend to maintain and even increase this

level; this is what we are working on. The pilot implementation of the CAPRICE project was aimed at increasing the passenger information level by introducing a travel planner on our website which would integrate public transport and railway timetables. It is an intermodal travel planner, and additionally it connects two capital cities, Warsaw and Berlin, together with other regions participating in the EU-Spirit programme, which I will explain later.

The implementation process began with a demo version of the travel planner, which is a product called HAFAS, produced by a German company from Hanover. The implementation of the travel planner took us a year, from 2009 to 2010, and was a lot of work, especially with the conversion of the timetable data, which is very specific as it comes from the ZTM's timetables from the early 1990s, and the specialists from the travel planner spent a lot of nights on the conversion of this specific format.

The other difficult job that had to be done was the integration of the travel planner with our website, which was also launched very recently, and we still have to solve part of the railway data integration problem, so the aim of the project was not entirely met. We have many railway operators in Warsaw, and while we have the rapid rail data we do not have it for regional rail, and we are still working on this topic.

The functionalities of a travel planner are of course standard travel planning from A to B, from address to address, from stop to stop, and you can search stops online as well. The main problems here were connected with Poland's specific timetable and route planning systems, which were quite different from the ones the German specialists were familiar with and caused some problems in terms of understanding; finally it succeeded, but it took a little time.

It is a tradition in Poland that who uses public transport wants to have a printed timetable at home to put on the fridge, the entrance door or elsewhere, and that has to be recognised when planning such functionality on our website; this is one of the main and most used functions of the travel planner programme. A simple mobile interface was introduced as well. We have entered the EU-Spirit partnership, which is a network of European timetable information with members mainly from northern and western Europe, and just last year we attended a meeting convened by Movia in Copenhagen. You can freely choose connections between the members of this group from your starting address via local public transport to the airport or railway station, then inter-regional travel and finding your way to your final goal via public transport.

I wanted to show you how it works in practice, but there is no Internet connection here. You can write in the address of your destination or starting point, your travelling time, the travel modes you want to choose, and then click and search for your connection. We have a very simple mobile interface which can be used in all kinds of phones, not just smart phones; we are very interested in the different iPhone and Android applications, but in Poland the market share of these kinds of phones are still not very high, so we are interested in a universal solution.

I will draw a few conclusions regarding what we have learned during the project and the pilot implementation. It was a very important step in developing passenger information in Warsaw. This was the most difficult application ever to be introduced to our website; the mobile functionality was synchronised with the introduction of a mobile website, so the development has been hastened for mobile phones. We have measured all the routes and coordinates with GPS for project purposes, and the coordinates are now included in the timetable database.

All these experiences will enable us to better manage passenger information in the future. For example, very recently a new unit was created inside the Authority for electronic timetable management, which mostly has to do with the electronic applications such as travel planner. The passengers were very interested in the application as well, and we have received a lot of feedback, both positive and negative; there were more negative responses, because in our experience regular passengers are more likely to send us correspondence than the satisfied ones. We have also learned that we should concentrate more on passenger needs; after overcoming the technical difficulties, we can focus on what our passengers want.

Regarding the European connections and the EU-Spirit travel planner, we have learned that there is a need for international travel planning from door to door, because this is the only way to compete with the private car; so if

you have a car and travel abroad, you just enter your GPS coordinates and drive to the address, while if you use public transport, you have to find out how to get from the airport in Madrid, for example, to the address, which sometimes can be a difficult job, especially if you are not a public transport expert.

The integration of the different data systems is a huge challenge as well, as we have learned, and I have discussed this; there are different national cultures and different methods of development, so it is a huge threshold to cross. We have been invited to a new EU-funded follow-up project, which is called the Rail Baltica Growth Corridor; this is connected with the huge infrastructural development of Rail Baltica, connecting the capital cities around the Baltic Sea coast by railway. This is another international cooperation project, so from a budgetary point of view it is only a few hundred thousand euro, but we hope for similar positive experiences and lessons to those from the CAPRICE Project.

Marc GARCÍA

Thank you very much, Tamas. Let me give you some figures. About 110 people attended this session, 93% of whom were fully awake, 7.5% of whom were occasionally asleep, and only 0.3% slept throughout the session, so that means the session is successful.

Questions and Answers

Marc GARCÍA

I have a question for Per. I am curious about how people validate the SMS ticket.

Per GELLERT

There are some codes within the SMS which are unique and secret, so there is the possibility of checking. It is a string of 10 or 15 digits. Some people have tried to create false SMS tickets, of course, because it is easy to pass an SMS on to your friends or whatever, but this code cannot be counterfeited. It is like this: if you cheat with a normal bus ticket, you are fined a certain amount, but if you cheat with this SMS, it is document forgery, which is a criminal offence, so this has really scared people off from trying to copy them.

From the floor

I have a very quick question. Who pays for the actual message in the SMS system, the user or the provider?

Per GELLERT

It is actually free for the user. The cost is 9%, and it is split between the banks which have to handle the accounting, which is less than 1% of the cost; the telephone operators charge 5-6%, and the rest is charged by the company which provides the software.