

	<h2 style="text-align: center;">VIAJEO PLUS</h2>
	<h3 style="text-align: center;">D6.2 Enabling Infrastructure for City Mobility Week (Preliminary Set-up)</h3>

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<p>Abstract</p>	<p>One important task of the Viajeo Plus project is to organize four individual “Innovation in Transport - City Showcase” in Europe, China, Latin America and Singapore respectively. Each of the City Mobility Week consists of Showcases (live demonstration or site visits), dedicated workshop, bilateral meetings between stakeholders. This deliverable aims at summarising key innovative solutions on enabling infrastructure. Those solutions are proposed as showcases for the “Innovation in Transport - City Showcase” and will be further evaluated together with solutions proposed from other WorkPackages (WPs) in order to select host cities and showcases at each of the host cities. For enabling infrastructure, the following solutions are proposed:</p> <ul style="list-style-type: none"> - Europe: Plug-in charging station at bus stop for deployment of clean vehicles and micro-terminal for sustainable urban logistics; - China: BRT lanes on elevated ring road in Chengdu to enable innovative public transport solutions and Hongqiao multimodal interchange in Shanghai for integrated mobility management;
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Week (Preliminary Set-up)

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1. Introduction

1.1. Objective of the deliverable

The goal of Viajeo Plus is to benchmark outstanding solutions for innovative and green urban mobility in Europe, Latin America, China and Singapore and subsequently facilitate the uptake of these solutions across different cities in these regions, and the Mediterranean Partner Countries (MPCs). The project collects and assesses mobility solutions in mobility management, clean vehicle, public transport, infrastructure and urban logistics implemented in different cities across the world. All the collected solutions will be evaluated in order to select them to be presented in the 'Virtual Best Solution Book', a web-based reference point to give stakeholders information on existing outstanding solutions.

The Viajeo Plus will organise four individual "Innovation in Transport - City Showcase" in Europe, Latin America, China and Singapore respectively. The "City Showcase" consists of showcases, workshops and stakeholder meetings. Through interactive showcases, participants can benefit from gaining first-hand experience of innovative solutions. Participants will exchange knowledge, information and best practice experiences through various workshops and meetings. This report aims at providing a list of practices related to enabling infrastructure which are considered as showcases in one of the "City Showcase" . .

Enabling infrastructure means infrastructure needed to implement innovative and green urban mobility solutions such as clean vehicles, integrated traffic control, innovative public transport and green logistics. Those solutions presented in the deliverable will be used as a reference for selection of host cities for the four "City Showcase"

1.2. Structure of the deliverable

In Chapter 2 an overview of the methodology to select best solutions for City Mobility Weeks are presented. Then in the following chapters lists of practices in different countries/regions are presented:

- Chapter 3 presents solutions proposed for the "City Showcase" in Europe.
- Chapter 4 presents solutions proposed for the "City Showcase" in China.
- Chapter 5 presents solutions proposed for the "City Showcase" in Latin America.
- Chapter 6 presents solutions proposed for the "City Showcase" in Singapore.

1.3. Target audience

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The deliverable mainly aims at providing information to all consortium members on the current situations of proposed best practices for the “City Showcase”. City Mobility Week organisers, i.e. WP8 partners, will use the deliverable to cooperate with other WP partners and evaluate all solutions proposed for the “City Showcase”. The WP8 partners together with the management team of the project, i.e. WP leaders, will then decide which cities will be selected as host cities and which showcases will be included in each of the four “City Showcase”.

It also gives information to external stakeholders on potential showcases for the “City Showcase” in order to attract more participants.

2. Methodology to Select Best Practices for the “City Showcase”

Methodology of selecting best practices for different purposes within the Viajeo Plus project has been identified in a project deliverable D2.1 “Best Solution Selection Methodology”². A summary of the procedure for decisions on the different level of best solutions is given in Figure 1 below.

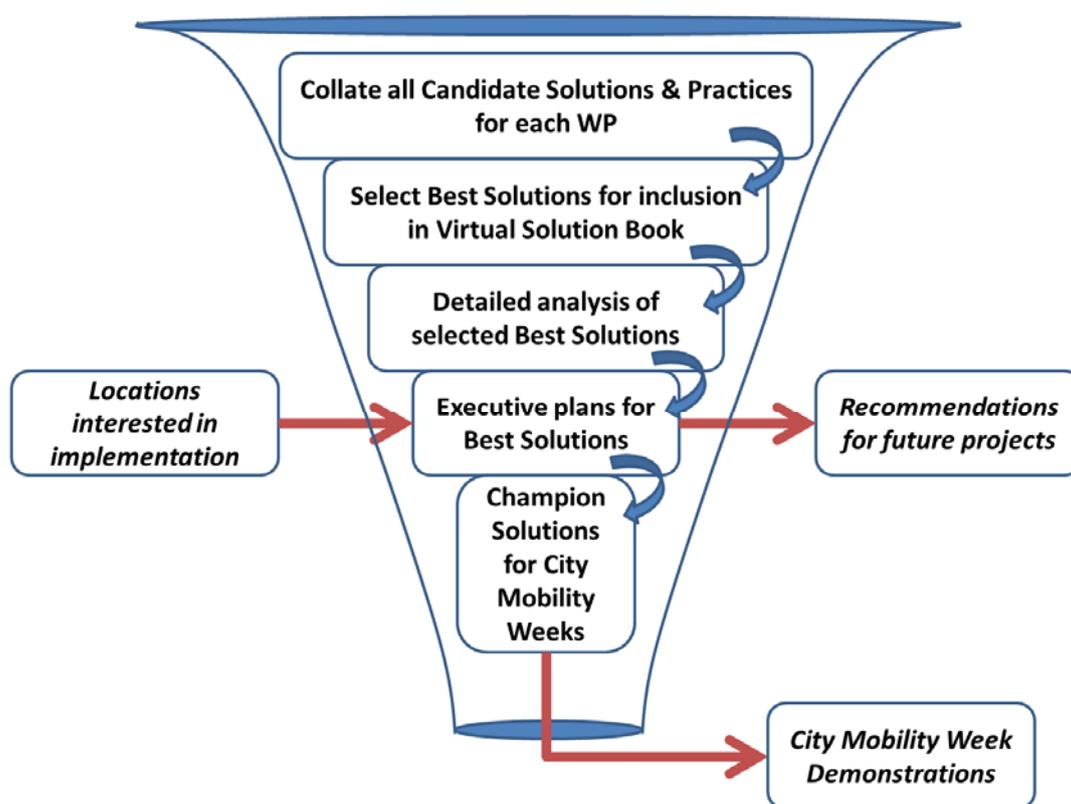


Figure 1 - Viajeo PLUS Flowline for Selecting Ultimate Set of Best Practice/Solutions

After identifying the methodology of selecting best practices, a large number of solutions have been initially gathered and analysed before various sifting assessments gradually reduce the initial set of solutions down to those deemed suitable for inclusion in the Virtual Solution Book and additional analysis and promotion.

² D2.1 is a public deliverable and available at: <http://viajeoplus.eu/Documents/viajeo-plus-best-solution-method/>

A list of criteria can be found in Annex I. However, selection of best solutions for the “City Showcase” also needs to take consideration of:

- Relationship with potential host cities. This is crucial since the “City Showcase” would require full cooperation with the host city and support from the local policy makers and stakeholders to explain motivation, implementation issues, operations and benefits of such solutions to participants of City Mobility Weeks.
- Attractiveness of a solution for non-experts and external audience. The “City Showcase” aim to give first hand experiences. Some solutions that may not provide interesting first-hand experiences to users can be simply presented in the Virtual Solution Book rather than selected for the City Mobility Weeks. Solutions that provide interesting first-hand experiences to attract users would be given priorities.
- Transport and mobility services in potential host cities. Since the “City Showcase” can only be hosted once in each of the four regions/countries, it is not feasible to let participants to go different cities in region/country. Therefore, the host cities should have more than just one innovative solution and ideally is advanced in transport and mobility services in general in order to make the host cities more attractive to participants.
- Location of potential host cities. A host city should be easy to reach by participants from all over the world.

3. Enabling infrastructure solutions for City Mobility Week in Europe

3.1. Plug-In charging station at bus stop in Gothenburg

Description

The first plug-in charging station was installed at a bus stop at Redbergsplatsen, Gothenburg, in May 2013. The Ultra-fast charging station installed at each end of the #60 bus route supplies electricity to the new Volvo Plug-in Hybrid Bus to enable quiet, emission-free electric-only driving for the majority of the route. The Volvo Plug-In Hybrid is based on Volvo 7900 Hybrid bus, but with the addition of a larger, energy optimized battery and ultra-fast charging capability. The charging station is located at each end of the bus route which fast charges the bus for 5 - 8 minutes at the end of each trip. This extends the all-electric range of the Volvo hybrid bus to a predicted 60% or more of the route.



Figure 1The ultra fast charging station at Bus Stop in Gothenburg



Figure 2 A VOLVO hybrid bus is being charged at a charging station in Gothenburg

Funding

The HyperBus project is funded partly by the EU Life+ Innovation program, as well as with contributions from Business Region Göteborg, Göteborg Energi, City of Göteborg Traffic & Public Transport Authority, Volvo Buses and the public transport company Västtrafik.

Benefits

A normal Volvo hybrid bus may turn off its engine at a bus stop and then the diesel engine will be re-started again after only a few seconds of driving. The new plug-in hybrid bus continues on silently on electricity for most of the route. Therefore, noise and air pollution from such buses will be reduced significantly. It contributes better air quality in the city in a short term and saved green house emissions in a long term.

"Our being able to drastically reduce exhaust fumes and noise is important for everyone who lives, works and plays here." says Birgitta Hellgren, Traffic Director, City of Gothenburg Traffic & Public Transport Authority.

Key stakeholders related to infrastructure

- Opbrid Busbaar, a Spain-based charging station provider, that manufactured the charging station;
- Göteborg Energi, the electricity provider for the city of Gothenburg. The electricity supplied to the charging station is renewable from wind turbines.

3.2. Micro-terminal concept at Campus Lindholmen, Gothenburg

Description

The City of Gothenburg has developed and applied a bundle of city logistics policies and solutions, including the regulation of city centre and shopping area, developing new infrastructure, establishing a consolidation centre, promoting the use of clean vehicles, developing trials of innovative solutions, monitoring and data collection on new vehicles and new technologies. Micro-terminal for logistics is a relatively new concept. Such terminals serve a limited geographic area, number of shippers and transport operators. A micro-terminal serves as a urban logistics consolidation node wherein small loads are consolidated. It directly addresses an issue of freight vehicles carrying low average loads.

Local distribution at the Lindholmen Science Park has been organised in the micro-terminal concept to minimise the goods transportation and reduce number of vehicles. The terminal has been in operation since June 2008. It started handing mails since December 2008. It has been fully operational since 2011 with 14 companies (still increasing) connected to it. The terminal receives and distributes goods and mail and carries out waste management (clean waste). The terminal is operated by the service manager of the properties. The services are well appreciated among customers.



Figure 3 Micro-terminal at the Lindholmen Science Park campus

Funding

The local freight network in Gothenburg was established in relation to the EU project START in 2005. Since then it has continued to develop with support from local authority, transport operators and trade associations.

Benefits

Micro-terminals can make more efficient usage of transport resources. Freight vehicles carrying low average loads can be reduced. Mileages of Heavy Goods Vehicles (HGV) can be reduced. Therefore, micro-terminals can reduce overall traffic at the city level³. The last mile delivery can be done by small freight vehicles (e.g. electric freight vehicles), thus reducing local air pollutions and overall green house emissions. It can improve efficiency of freight distributions

³ Jerry Olsson and Johan Woxenius, Location of freight consolidation centres serving the city and its surroundings, *Procedia - Social and Behavioral Sciences*, 39, pp. 293-306.

by shifting the distribution to a local level. It can save costs for freight operators, particularly for smaller freight operators (e.g. less than 10 employees). Therefore, small freight operators can enhance their competitiveness.

Key stakeholders related to infrastructure

There are many stakeholders involved with the decision of a micro-terminal such as local authorities, freight operators and local business. The main difficulty has been obtaining an agreement with business and retailers to use the terminal and its delivery vehicles. Choosing location of a micro-terminal should take into consideration many aspects and ideally is planned based on a large area (not limited to a city but a region). Therefore, local authorities play an important role together with trade associations and individual business owners.

4. Enabling infrastructure solutions for the “City Showcase” in China

4.1. BRT dedicated lanes on elevated ring road in Chengdu

Description

Chengdu’s 2nd Ring Road was completed in May 2013. The total length of the ring road is 28.3 km. There are in total 10 junctions with overpasses. The speed limit on the ring road is 80km/h and for ramp roads the speed limit is 40km/h. There is not traffic light on the ring road. A unique feature of the ring road is that there are dedicated lines for Bus Rapid Transit (BRT) on the ring road. There are two BRT lines: K1 and K2 and on the ring road there are 28 BRT stations. Each of the station serves passengers for both directions.



Figure 4 Locations of BRT Bus Stations on the 2nd Ring Road, Chengdu⁴

⁴ Source: Institute for Transportation and Development Policy, Gongzhou, available at <http://www.chinabrt.org/cn/cities/chengdu.aspx>

Each of the bus stations is on the elevated road and can be accessed through pedestrian cross and staircases. Below some pictures show the BRT stations and BRT lanes on the elevated ring road.



Figure 5 BRT Bus Stations on the 2nd Ring Road, Chengdu⁵

Funding

Construction of BRT lanes was a part of the construction of the ring road, financed by the city government.

Benefits

Chengdu has 5 million residents and the city suffers from traffic congestion and pollutions from road transport. In the recent years, Chengdu has become an economical centre for the western China. With the development of the economy in the city, the car ownership has been increased

^{5 5} Source: Institute for Transportation and Development Policy, Gongzhou, available at <http://www.chinabrt.org/cn/cities/chengdu.aspx>

by 15% while the road length also increases by 5%. The city has been transferred from a relaxing middle sized city to a metropolitan area. The fast growth of the city has results in many problems in residents' mobility, such as severe congestion, delay, overcrowded public transport and limited services of public transport. BRT system has been implemented to address the increasing demand on mobility in the city. The BRT system transports 250,000 passengers per day, resulting in significantly increasing capacities of public transport. In Chengdu, 26.5% of trips are carried out by BRT. It can reduce travel times by up to 90 minutes for some journeys. The BRT system can therefore ensure the economical development of the city.

Key stakeholders related to infrastructure

City planners and policy makers: they made decision on planning BRT systems while planning new infrastructure. The planning of BRT system was a part of planning of the ring road.

Public transport operators: they cooperated with city planners to plan the BRT system. This is a very successful experience which may be worth to introduce to other developing countries in order to increase acceptance of BRT.

Successful experiences

In Chengdu, the BRT system has been planned together with the ring road planning, i.e. BRT lanes and stations were planned together with the ring road. The BRT lanes and stations were constructed together with the ring road. In this way, cost and negative effects of constructing BRT systems on traffic can be minimized. Of course most BRT systems have been added to existing infrastructure. However, if new infrastructure is planned, option of building BRT system with the new infrastructure may be considered. This experience would be particularly useful for Mediterranean Partner Countries (MPC) while new infrastructure is being planned and constructed.

4.2. Shanghai Hongqiao Interchange

Description

Hongqiao Airport is the old airport of Shanghai. It has been used mainly served domestic flights (mainly from Beijing) after Shanghai Pudong International Airport was in operation in 1998. There were proposes to close down the airport or change the airport for freight only. However,

Hongqiao has short distances to the city centre as well as to surrounding cities. Therefore, in 2006, Hongqiao high speed railway station was planned. The planning was further extended to build an interchange to connect high speed rail, regional rail, local public transport, long haul coach and air transport.

The surrounding area of Shanghai is called “the Yangtze River Delta” or YRD. It generally comprises the triangle-shaped territory of Wu-speaking (local dialect) Shanghai, southern Jiangsu province and northern Zhejiang province of China. It covers an area of 99.6 thousand square kilometres (38,500 sq mi) and is home to over 115 million people as of 2013, of which an estimated 83 million is urban⁶. The region is the richest region in China and has the highest private car ownership rate in China. It plays an important role in the Chinese economy. Therefore, Hongqiao Interchange was designed to serve the YRD area rather than Shanghai only.

Hongqiao Interchange was in operation since March 2010. The Interchange is current the biggest interchange and one of the busiest intermodal changes in the world. It connects airport (two terminals), railway station for high speed and regional trains (with 40 railway trucks), coach station, metro (2 lines), local buses and 4 motorways. The interchange is used by 580,000 people per day (or 212 million per year). The two metro lines (Line 2 and Line 10) carry about 14.4% of passengers. There are three metro stops within the interchange: Terminal 1, Terminal 2 and Railway station.

Hongqiao Interchange became particularly notable after the operation of Beijing-Shanghai high speed rail. Beijing-Shanghai high speed rail has been in operation since 2011 and it takes 4 hours 45 minutes from one city to the other. The average number of daily passengers is 230,000 in 2013. All the passengers arrive in Hongqiao Interchange and through the interchange to their destinations.

Funding

In 2006, Shanghai Rainbow Investment Corp was set up by the Shanghai government. The firm has been responsible for the investment for the interchange. The land was provided by the city free-of-charge. The railway station was financed by the railway company. The airport was financed by the Airport Management Company. The metro station was financed by the Metro Company. The rest infrastructure including an electricity substation, eastern and western site plazas and car parks underneath was financed by Shanghai Rainbow Investment Corp.

⁶ http://en.wikipedia.org/wiki/Yangtze_River_Delta

Benefits

It has been estimated that:

- generating more than one million jobs
- promoting the construction and related industries
- shortening the distance between the Yangtze River Delta economic circle in space , so that the Yangtze River Delta region closer economic ties is conducive to the Yangtze River Delta economic integration

Shanghai and other cities in the Yangtze River Delta to strengthen links

As a service to improve the efficiency of Shanghai international shipping center , and enhance overall competitiveness of Shanghai international shipping center

As well as the Yangtze River Delta hinterland service window, close contact with the entire regional economy.

Promoting social and economic development of the Yangtze River Delta region further rapid, enhanced radiation and leading role in Shanghai on the Yangtze River Delta

By the railway the interchange information platform integrates data from 7 different transport modes: aviation, high speed rail, regional rail, coach, metro, local bus and taxis. The information platform has five sub-systems including an Emergency Response Centre and a Hub Operation Centre. Information is disseminated via 76 displays through the interchange, website, apps etc. A passenger can see real-time railway arrival and departure information at the airport terminals. Real-time public transport information is displayed at airport terminals and the railway station.

5. Enabling infrastructure solutions for the City Showcase in Latin America

5.1. Curitiba Tube-shaped BRT stops

Description

BRT's history resides in a variety of previous efforts to improve the transit experiences to the customers. Despite of several small-scale trials prior to Curitiba such as express buses using contra-flow bus lanes in New York City in 1963 in order to establish the idea, the first wide-scale development of the BRT concept occurred in Curitiba in 1974. Curitiba's BRT stops were designed by Jaime Lerner, the architect and designer of the BRT system. The BRT system uses the ironically tube-shaped stops.



Figure 6 Green Line (Linha Verde) biarticulated express buses (ligeirão) at Marechal Floriano Station⁷

The tube-shaped stops were originally driven from the idea that the BRT system was a replacement of the planned metro system which was abandoned due to lack of funding. The tube stops were therefore aiming at give customers experiences as they use a metro. However, such stops have great benefits as they provide pre-boarding and waiting areas. A passenger already uses ticket to enter the bus stop and directly board a bus without further ticket inspection. Such bus stops allow fast boarding to a bus, as it would be done at a metro stop, thus make the bus system more efficient.

⁷ Source : http://en.wikipedia.org/wiki/Rede_Integrada_de_Transporte



Figure 7 Entrance and exit of a tube-shaped stop⁸

Funding

The Curitiba BRT system was funded by the city of Curitiba. The infrastructure was constructed in the 1970s and has been modified and updated.

Benefits

The tube-shaped stops can allow fast boarding, thus ensuring the shortest waiting time at each bus stop and efficiency of the overall BRT system.

The iconic shape of the stops successfully attracts attention from all over the world. Such bus stops reported by media worldwide, thus attracted more cities interested in the BRT systems. It also helps BRT systems to gain more public support.

Stakeholders related to infrastructure

City authorities and bus operators are the key stakeholders. However, Jaime Lerner is the father of the Curitiba BRT system. He is a Brazilian politician and was the governor of the state of Paraná, in southern Brazil. He is renowned as an architect and urban planner, having been mayor of Curitiba, capital of Paraná, three times (1971-75, 1979-84 and 1989-92). The tube-shaped stops were created during Lerner era in Curitiba.

⁸ Source: CTS-Brazil

5.2. Curitiba BRT overtaking lanes

Description

The BRT system in Curitiba has two types of bus services:

- Express bus service offering frequent stop services, and it is operated at a speed of around 20 km/h.
- Direct high-speed bus service with limited stops and it is operated at a speed of around 30 km/h.

The Green Line (Linha Verde) is the 6th BRT corridor of Curitiba and is the first to incorporate since its early conception stages, overtaking lanes for a mix of express and direct BRT services. The Green Line was in operation since May 2009. The implementation of a third median lane for bus overtaking at bus stations allowing for the simultaneous operation of express and direct service lines, in order to increase the BRT lane capacities and operation speeds .



Figure 8 Overtaking Lane at Green Line in Curitiba

Funding

The overtaking lane construction is a part of the Green Line construction which cost about \$60 million.

Benefits

The overtaking lanes change the traditional way of BRT to allow both normal BRT services and direct fast BRT services, thus increasing capacities and the operation speed to up to 30 km/h. It can therefore shorten intervals between buses and passengers' waiting times. It can also enhance the overall passengers' experiences with the BRT systems.

Key stakeholders related to the infrastructure

Construction of the overtaking lanes for BRT systems needs cooperation between local authorities including city planners and BRT operators to understand the needs, i.e. which stops need the overtaking lanes, and allocate spaces for the lanes and stops.

6. Enabling infrastructure solutions for the City Showcase in Singapore

6.1. Charging station and software from EV Test Bed

Description

The Electric Vehicles (EVs) Test-Bed is a project co-lead by the Energy Market Authority (EMA) and Land Transport Authority (LTA) of the Singapore government. Launched in June 2011, the test-bed is participated by 53 organisations. The test-bed aims to assess different electric cars prototypes and charging technologies given Singapore's urbanised environment and road conditions, to determine the feasibility of using EVs in Singapore.

The test-bed aims to examine several issues relevant to policies regarding roll-out of EVs in the future including:

- The optimal way to operate and deploy charging infrastructure;
- Consumer behaviour on charging and range anxiety;
- Robustness of EV battery systems; and
- General performance of EVs on Singapore road conditions.

As part of this EV test-bed, data from four EV models would be collected:

- Daimler Smart electric drive (ed)
- Mitsubishi i-MiEV
- Nissan Leaf
- Renault Fluence Z.E.

Data collection has ended on 31 Dec 2013 and a review of collated data is currently underway.

In all, 89 EVs participated in the test-bed. To cater to the charging needs of the EVs, 68 normal charging stations (full charge within 7-8 hours) and 3 quick charging stations (full charge within 30-45 minutes) have been deployed. The following map shows the location of the charging stations.

In addition to the charging station infrastructure itself, the software plays a crucial role to intelligently network charging stations. All EV Test-bed participants are given access to a mobile app provided by Bosch software Innovations. Amongst others, the app comprises a map to locate a charging station and displays its availability in real-time. The app allows seamless

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usage by all drivers with a single subscription to access multiple charging networks operated by different service providers.



Figure 9 Location of charging stations around Singapore⁹

All the charging infrastructure is integrated via secured internet technology and transaction details and billing options can be done via internet. In order to subscribe for the charging service, sign up to the Driver Portal is a pre-requisite. The subscription includes providing demographic details and NETS CEPAS card numbers.

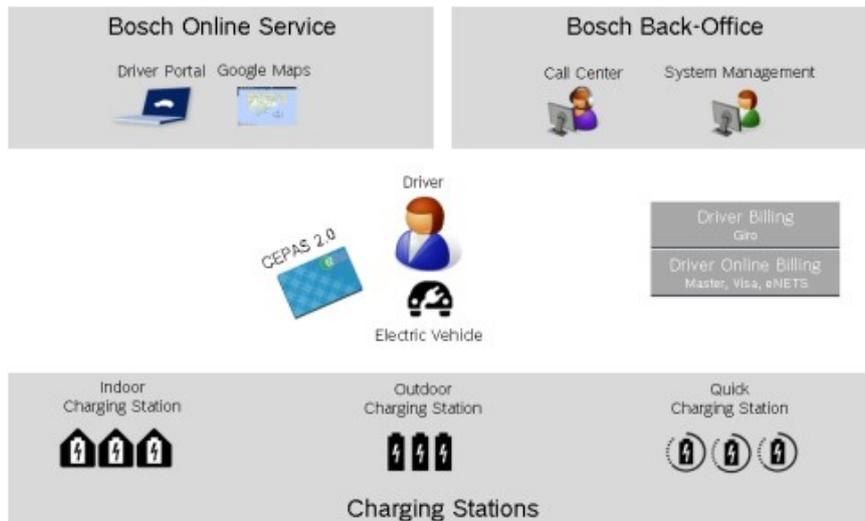


Figure 10 Bosch e-Mobility Service in Singapore

⁹Source: <http://www.bosch-emobility.sg/en/com/charginglocations/publicmap.html>

Each charging station consists of a cable and a suitable plug. A driver can tap his NETS CEPAS card to identify at the charging station. After authorization the charging station releases the cable for charging. The driver then can plug the cable in his vehicle and the charging process will start. The current subscription is based on a monthly flat fee.



Figure 11 Outdoor Normal Charging Station

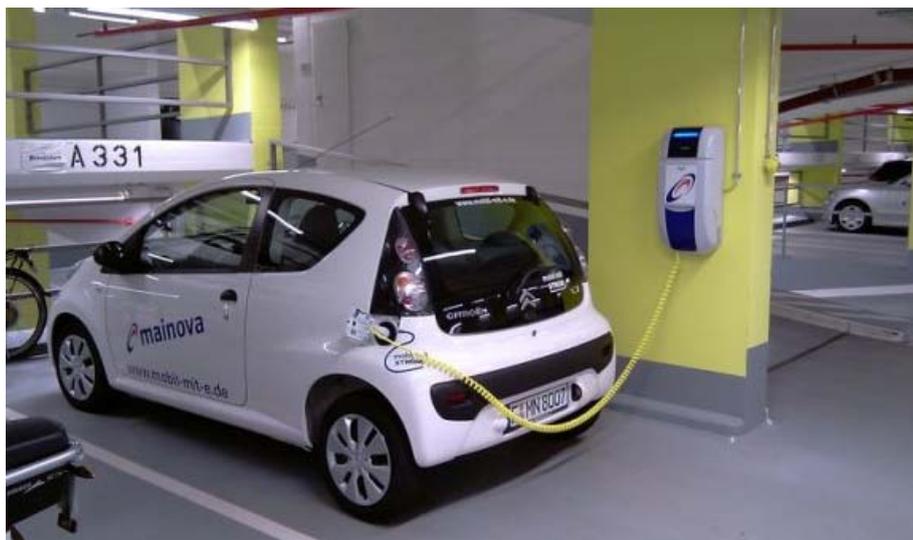


Figure 12 Indoor Normal Charging Station

Funding

The infrastructure was co-funded by the Singapore government agencies, i.e. Energy Market Authority (EMA) and Land Transport Authority (LTA), and industry partners.

Benefits

Singapore is set to be amongst the first cities in the world to test-bed an ecologically sustainable and integrated transport solution at the system level. Mr Tan Choon Shian, Deputy Managing Director, Singapore Economic Development Board said that The EV test-bed is an excellent example of how Singapore presents itself as a 'Living Laboratory', in this case for EV manufacturers, charging solution providers and automotive component players, working closely with various stakeholders in both government and utilities sector.

The EV test-bed has help government agencies, drivers and industry partners to gain a better understanding of EV technologies, business models and user preferences which provided valuable information to determine the feasibility of using EVs in Singapore and the government's future policy on EV. The launch of the electric vehicle test-bed marked a significant milestone for land transport in Singapore.

Key stakeholders related to infrastructure

- Government agencies: the Energy Market Authority (EMA) and Land Transport Authority (LTA)
- Industry partners (e.g. Bosch) to provide the charging stations;
- Car park operators including commercial property owners, e.g. shopping mall owner/managers

7. Conclusion

One important task of the Viajeo Plus project is to organize four individual the City Showcase in Europe, China, Latin America and Singapore respectively. Each of the City Mobility Week consists of:

- Showcases (live demonstration or site visits)
- Dedicated workshop
- Bilateral meetings between stakeholders

This deliverable aims at summarising key innovative solutions on enabling infrastructure. Those solutions are proposed as showcases for the City Showcase". Those solutions will be further evaluated together with solutions proposed from other WorkPackages (WPs) in order to select host cities and showcases at each of the host cities. For enabling infrastructure, the following solutions are proposed:

Table 1 Summary of Proposed Solutions for Different Regions

Country/Region	City	Proposed solutions	Innovative solutions enabled by the solution
Europe	Gothenburg	Plug-In charging station at bus stop	Deployment of clean vehicles
		Micro-terminal for urban logistics	Sustainable urban logistics
China	Chengdu	BRT lanes on elevated ring road	BRT (innovative public transport)
	Shanghai	Hongqiao multimodal Interchange	Integrated mobility management
Latin America	Curitiba	Tube-shaped bus stops	BRT (innovative public transport)
		BRT overtaking lanes	
Singapore	Singapore	EV test-bed	Deployment of clean vehicles

Annex Criteria of Selecting Best Practices

No.	Criteria	Definition	Proposed Scoring Scale
01	Innovation Degree	Solution is comparatively new and has not experienced broad diffusion in practice	(No negative values) 0 = Solution is innovative for the host city/country only 1 = Solution is innovative within a global region 2 = Solution is innovative across different global regions
02	Policy Relevance	Solution addresses a range of key policy objectives (e.g. economic efficiency; modal shift; social inclusion; environmental sustainability; increased accessibility etc.)	(No negative values) 0 = Little or no relevance to any key policy objectives 1 = Relevant to one, specific key policy objective 2 = Relevant to more than one key policy objective
03	Civic delivery team	Resource capability to successfully deliver the solution	-2 = Requires a large team spread across multiple departments or stakeholders to successfully implement and operate the solution -1 = Requires a small team spread across multiple departments or stakeholders to successfully implement and operate the solution 0 = Solution can be successfully implemented with one key partner taking the lead but with support from other partners +1 = Solution can be successfully implemented and managed by a larger but dedicated team hosted within one organisation +2 = Solution can be successfully implemented and managed by a smaller but dedicated team hosted within one organisation
04	Maturity	Solution is ready for implementation, having passed pilot or experimental stages and can build on working examples in one or more cities	(No negative values) 0 = Solution maturity is equivalent to a TRL of <=5 1 = Solution maturity is equivalent to a TRL of 6-7 2 = Solution maturity is equivalent to a TRL of 8-9 (TRL = Technology Readiness Level)
05	Global Potential	Solution could become implemented broadly across countries/cultures/regions	-2 = Significant social, political, cultural, economic etc. barriers exist to a wider implementation -1 = Some social, political,

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No.	Criteria	Definition	Proposed Scoring Scale
			cultural, economic etc. barriers exist to a wider implementation 0 = No social, political, cultural, economic etc. barriers exist to a wider implementation, but little benefit would be gained on a global scale +1 = Wider implementation would bring benefits on a global scale +2 = Wider implementation would bring significant benefits on a global scale
06	Localised applicability	Solution addresses a very particular issue with a limited take-up potential	-2 = Solution only addresses a specific issue, only relevant to existing location -1 = Solution only addresses a specific issue, which is found in multiple locations 0 = Solution addresses a small number of issues, primarily found in existing location +1 = Solution addresses a small number of issues, found in multiple locations +2 = Solution addresses a wide range of issues, which are found in multiple locations
07	Complementarity	Represents a promising complement for other (innovative) solutions	-2 = Very limited or no complementarity potential with other solutions -1 = Limited complementarity potential with other solutions 0 = Some complementarity potential with other solutions +1 = Good complementarity potential with other solutions +2 = Strong complementarity potential with other solutions
08	Expected Impacts	Previous implementation of solution has had social, economic and environmental impacts	For each of social, economic and environmental (where relevant): -2 = Strong negative impact -1 = Negative impact 0 = No impact/no change +1 = Positive impact +2 = Strong positive impact
09	Measurability	Progress of solution implementation can be measured sufficiently	(No negative values) 0 = Hard to measure progress due to a lack of data or suitable metrics

D6.2 Enabling infrastructure for City Mobility
Week (Preliminary Set-up)

No.	Criteria	Definition	Proposed Scoring Scale
			1 = Progress can be measured with some limitations (e.g. data may be incomplete) 2 = Progress can be easily measured regardless of location
10	Public Acceptance	Solution is likely to have a wide public acceptance	(No negative values) 0 = No impact/no change 1 = Some public acceptance 2 = Strong public acceptance
11	Expandability/ Scalability	Solution can be up-scaled to accommodate different contexts and situations	-2 = Solution cannot readily be up-scaled -1 = Solution would require significant effort/investment to up-scale in a new context 0 = Solution would require some effort/investment to up-scale in a new context +1 = Solution would require minimal effort/investment to up-scale in a new context +2 = Solution would require little or no effort/investment to up-scale in a new context