THAILAND

TRANSPORTS IN THE CITY: HOW TO SPEED UP HIGH-QUALITY AND EFFICIENT PROJECTS?

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To the contributors of this two-day seminar:
Mr. Benoit BERGERON, Deputy Director for Rail, EGIS Asia
Mr. Denis FUENTES, Transport Architect, SUEZ Consulting
Mrs. Marion HOYEZ, Project Manager, CODATU
Mr. Etienne LHOMET, Director, DVDH
Mr. Pedro B. ORTIZ, Metropolitan Expert, former Deputy Mayor for Madrid in charge of Strategic Planning
Mr. Kavee TANSUKHATANON, Vice Mayor, Phuket City Municipality
Mr. Siwaphong THONGJUE, Urban designer and Architect
Mrs. Jindarat VIRIYATAVEEKUL, Director Public Infrastructure Project Financing Bureau, PDMO

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Mr. Suwit ROJANAVANICH, Director General, PDMO
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Mrs. Ariane DUCREUX, Regional Director, AFD
Mr. Stéphane CARCAS, Project Manager – Lead Transport Specialist, AFD
Mrs. Suwida KINGMUANGKOW, Senior Investment Officer, AFD
M. Lois SEVESTRE, Investment Officer, AFD

The present document was produced by:
Mrs. Laura CORNELIS, Urban Geographer, DVDH
Mr. Etienne LHOMET, Director, DVDH
Mrs. Marion HOYEZ, Project Manager, CODATU

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<th>Acronym</th>
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<tr>
<td>AFD</td>
<td>French Agency for Development</td>
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<tr>
<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
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<td>BRT</td>
<td>Bus Rapid Transit</td>
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<td>BTS</td>
<td>Bangkok Transit System</td>
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<td>CODATU</td>
<td>Cooperation for urban mobility in the developing world</td>
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<td>DVDH</td>
<td>French consultants for sustainable mobility (Des Villes &amp; Des Hommes)</td>
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<td>EEC</td>
<td>Eastern Economic Corridor</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>ITS</td>
<td>Intelligent Transport System</td>
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<tr>
<td>LEED – ND</td>
<td>Leadership in Energy and Environmental Design for Neighborhood Development</td>
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<td>LRT</td>
<td>Light Rail Transit</td>
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<td>MoF</td>
<td>Ministry of Finance</td>
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<td>MoT</td>
<td>Ministry of Transport</td>
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<td>MRT</td>
<td>Metropolitan Rapid Transit</td>
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<td>NFC</td>
<td>Near Field Communication</td>
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<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<td>NMT</td>
<td>Non-Motorized Transport</td>
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<td>O&amp;M</td>
<td>Operation and Maintenance</td>
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<td>OCC</td>
<td>Operation Control Centre</td>
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<td>OTP</td>
<td>Office of Transport and Traffic Policy and Planning</td>
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<td>PDMO</td>
<td>Public Debt Management Office</td>
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<td>PPP</td>
<td>Public Private Partnership</td>
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<td>PTA</td>
<td>Public Transport Authority</td>
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<td>SEPO</td>
<td>State Enterprise Policy Office</td>
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<td>TOD</td>
<td>Transit Oriented Development</td>
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The two-day workshop “Transports in the city: how to speed up high-quality and efficient projects?” took place on the 23rd and 24th of May 2017 in Phuket, Thailand. This Thai-French event was co-organised by the Public Debt Management Office (PDMO) of the Ministry of Finance of Thailand and the French Agency for Development (AFD), and was a sequel to a first event organised in November 2016 in Bangkok.

Designed by CODATU, a French-based NGO promoting sustainable urban mobility in the developing world, the workshop focused on the design, integration and implementation of high quality public transport projects in Thai cities. This second seminar particularly focused on the potential issues the Province of Phuket could be facing in terms of Urban Transport development and how to address them.

Thailand is a fast-growing country, which economy requires the modernisation of transport infrastructures. Transport is important to create value, make sure people are more connected and create opportunities for urban dwellers. Furthermore, sustainable transport is key to address climate change issues. Nevertheless, public transport is essential to ensure a successful and sustainable economic growth. In France, ambitious urban development plans including successful implementation of at-grade public transport systems have reinforced the attractivity of more than 30 cities. Public transport projects can become the landmark of a city, as it is the case in Paris, Lyon, or Bordeaux.
The island of Phuket is 48 kilometres-long from north to south, and 21 kilometres wide. The main city, Phuket city, is located on the south-east part of the island and gathers around 150,000 inhabitants. The first settlements were made by Chinese when the island became one of the major trading routes between India and China, and one of the main tin producer/exporter in the world. Portuguese, French, Dutch, and English traders have also shaped the urban landscape: the old part of the city has a great Sino-Portuguese heritage, while rather unknown outside Thailand. The region now derives much of its income from tourism.

With the daily arrival at the Phuket airport of 30,000 visitors, around 900,000 people might live and travel at the same time on the island.

As the place is now recognised worldwide for its white beaches and paradisiac tropical landscapes, the population of the island has exploded with the daily arrival at the Phuket airport of 30,000 visitors and the presence of expatriates and workers staying for several months during the dry season (or high touristic season). It is estimated that an average of 300,000 visitors stay on the island, mostly on the western coast, which is the most touristic today. Only the northeast part of the island remains a more rural and wild area. Then, around 900,000 people might live and travel at the same time in the island.

Figure 1: Principal areas and roads structuring Phuket Island

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1 In total, around 600,000 persons live permanently on the island (source: http://www.citypopulation.de/php/thailand-admin.php)

2 The Phuket International Airport handled about 15 million arrivals and departures in 2016, or 7 to 8 million people (go and back). This frequentation can be adjusted to a daily estimation, dividing by 250 days: it is 30,000 people per day arriving on the island, most of them being tourists.

3 Supposing that the tourists stay approximately 10 days on the island, this is (10x30,000) 300,000 tourists at the same time on the island.

4 600,000 permanent residents and 300,000 to 400,000 tourists and seasonal workers.
This consequent concentration of population on a small territory naturally leads to basic issues, such as the provision of water and food products, energy supply and, above all, provision of efficient and qualitative mobility solutions. The island is connected through a couple of roads, along with the Highway 402 (H402) stretching from north to south. This corridor can be considered as the natural mobility backbone of the island, although the main touristic places, located on the west coast, are not directly served by the H402. Mobility relies mainly on private vehicles, cars and motorcycles. A variety of public transport vehicles is running on the island, such as tuk-tuk, Songtaew (blue open-air buses), Baht Bus (Pink Trucks with bench seats) and air-conditioned micro buses, but it is still insufficient. Otherwise, taxis, vans and private tourist bus companies are the main solutions for foreigners to move around.

Based on this observation, there is a strong need for a mass public transport solution, and the Government has been studying the possibility to set up a Light Rail Transit (LRT) system on the H402 corridor. The Office of Transport and Traffic Policy and Planning (OTP) from Ministry of Transport in Bangkok has launched a still on-going pre-feasibility study for a 60-km long LRT - or tram-train - from Tha Nun station, on the main land, down to Chalong Circle. The project would have 21 stations, including the airport and Phuket Old Town, where the stations would be located every 500 meters. In this urbanised area, the LRT would run like a tramway, with a speed of approximately 20 kilometres per hour (km/h). When running along the H402, the LRT would be able to reach 100 km/h speed capacity, more like a train. In total, the journey would take about 1h30min to ride the 60km long infrastructure. The expected daily ridership amounts to 68,000 passengers in the beginning years and around 140,000 in 2050, as presented in the first results of the on-going pre-feasibility study. The total cost of the project is estimated at 23.5 billion THB (590 million EUR or 9.8 million EUR/km).

This project has been under discussion for years now, and strongly needs to reach all key stakeholders’ consensus to move forward: such major project always requires a complex and tedious coordination to convince all the stakeholders or most of them, including local authorities and private sector key people, as well as financiers such as Ministry of Finance. The workshop has also been an opportunity to invite attendants in reviewing the current project in terms of design, implementation modalities and financial viability. It has been tried to identify all these issues based on the needs for Phuket territory and on the experiences shared by internationally recognized practitioners.
Figure 2: LRT project in Phuket (Source: OTP)
Assessing an urban planning project requires an understanding of historical background of the town and an understanding of the town’s natural environment and its landscape limitations. As mentioned by Pedro Ortiz, urban areas are exploding all over the world, both in terms of population and space consumption. In 2010, half of the global population was living in urban areas, and, as a matter of fact, Thailand is now 50% rural and 50% urban. Natural demographic growth is quite low but the phenomenon of rural migration is still ongoing in the country: places like Bangkok are still growing by 2% a year, which is equal to building Paris in 11 years (or one block of New York City every day!). And built up areas grow even faster. It is estimated that by 2050 Bangkok urban area will be multiplied by 2.2: a new Bangkok must be built in less than 35 years.

As for the case of Thailand, Bangkok can be considered as a metropolis with a different scale, much bigger than what we ordinary call “cities”. This new dimension appeared sixty years ago, along with the demographic explosion and the growth of urban areas. Metropolises are usually described as cities of more than 750,000 inhabitants.

For decades, governments did not know how to deal with metropolises. Indeed, the management of a metropolis with substantial concentration of wealth – sometimes the metropolitan GDP is a very important part of the country’s one – is quite different from a city management. And

Figure 3: Evolution of Bangkok urbanization
this is exactly the case in Thailand: 44% of the GDP is produced only in Bangkok, and attention must be paid to its governance.

There is a recurrent dichotomy between the choice of economic efficiency or social equity. Metropolises try to break that dichotomy by mixing wealth and social justice. It is important to consider that a metropolis is made from hardware (natural elements, infrastructures, buildings) and software: human resources and social resources (how we work together to make better). Mr. Pedro Ortiz has developed a “chessboard approach” that he contextualises for a metropolis by practicing “brain-shops”: those exercises are like a huge workshop, gathering key decision makers around the table for a week for brainstorming about what will be the role of their metropolis, and what is the strategy to achieve this goal. The main principles of this participative path were explained during the workshop and first tentative sessions conducted for Phuket and also Bangkok.

Figure 4: The chessboard approach: each piece represents an element/neighbourhood of the city, and helps to understand the rank of prioritization of the particular zone and so to define how to link each piece (Source: P. Ortiz)

Figure 5: Example of an application of the chessboard approach to Bangkok (Source: P. Ortiz)
To be efficient and sustainable, a metropolis should adopt a polycentric structure, where public transport networks can organise interactions between urban and natural areas.

To be efficient and, above all, to be sustainable, a polycentric structure which means creating diverse centralities in the city that are organised in close interaction and with the natural layer/green network is more adaptive to a metropolis. Mobility networks and especially public transport networks can structure these interactions between urban and natural areas.

The relation between the transport mode and the urban shape depends on the location of the stops (the stations). For instance, heavy rail is adapted to the metropolitan scale: it allows a reticular polycentric distribution of the urban development areas. Density will be found around these stations, and should be maintained to promote Transit Oriented Development (TOD). In fact, the coordination with public transport authorities is important in the organisation of a metropolis. And this approach can be applied to many scales.

Figure 6: The link between the transport mode and the urban shape (source: P. Ortiz)
FOCUS 1: Decrypting Bangkok’s organisation

Bangkok’s structure is reticular by twice, organised in a dialogue as shown in the figure below. The public transport network is good but limited to Bangkok city-centre whereas the great metropolitan area should be the right scale to think the future in terms of public transport jurisdiction.

Railway lines structure the metropolitan area in a H structure, according to the topography (gulf of Thailand, mountains). If we consider this scale as relevant to define the metropolis of Bangkok, then this large urban area is quite adapted to get prepared to flooding and climatic change. This analysis introduces the concept of “urban acupuncture”, whose purpose is to understand how metropolises work, and how to organise them.

1.2 Reconnecting cities with nature

Natural elements contribute to the structuring of urban areas. We know how important preservation of nature is in urban contexts. To foster a sustainable development, cities must include greenery and innovation in their management.

When connected to the geography of the territory, urban development projects are even more efficient in terms of sustainability. As imagined for Bangkok’s H structure, considering the natural environment should be the basis of any urban development project.

The development of mass public transport solutions can be a tool to accompany this much-needed reconnection of cities with nature. Giving more space to public transport using renewable and clean energy of course will reduce the impact of traffic flows in terms of space consumption and air pollution. But there is more than that: favouring public transport will also foster the development of walkable cities, starting with a daily walk to reach the nearest station. And the whole urban development may be redirected towards a densification process along the public transport corridor, maybe taking advantage of abandoned brownfield rather than consuming more greenfield areas.
At-grade public transport systems are a relevant tool to contain cars invasion and rethink cities’ overall development to reduce public health and environmental issues.

From this point of view, at-grade public transport systems are a nice tool to contain cars invasion, while elevated or underground systems prevent from re-accommodating the street levels. Many cities in Europe, Northern Africa, South America and in Asia now rely on such at-grade transport systems to efficiently respond to high levels of mobility demand and to rethink their overall development. Those cities are going greener, take more care of environmental issues and finally get re-connected with nature.

Public health in city is a growing concern for both citizens and local administrations: lung diseases, diabetes and obesities and heart pathologies seem to spread in most developed and developing cities. Reducing the use of comfortable cars and reconnecting citizens with daily physical exercise are now becoming a pertinent requirement for urban development.
FOCUS 2:
Example of at-grade systems integrated in the environment

Figure 8: LRT project in La Reunion Island

Figure 9: LRT in Tenerife Island, Spain

Figure 10: LRT of Rabat, Morocco
FOCUS 3: The LEED-ND concept

“LEED-ND” (Leadership in Energy and Environmental Design for Neighborhood Development) is a concept who originated from the US Green Building council. It is a tool that helps evaluating the cities based on:

1. Smart location and linkage: new human settlements should be located on brownfield rather than deleting natural or preserved area. The design of such new construction should be in adequacy with the surrounding natural environment;

2. Neighbourhood pattern and design: a neighbourhood must be unique in its design whilst including common activities and facilities. Design should remember and reflect the history of all communities living in the neighbourhood, as the natural pattern associated with the place. For instance, Phuket neighbourhoods have adapted to the tropical rain forest environment: shades offering a protection from sun and rain are ubiquitous. Sino-Portuguese culture influences the old town design, and must be preserved as a treasury for the image of Phuket.

3. Green infrastructure connected with buildings. Recent hotels in Phuket have been renovated into green buildings, adopting an ecological design to reduce air and solid pollutions as emitted heat, and upcycling all kinds of materials.

More than just evaluating cities according to their level of sustainability, the concept of LEED-ND presents efficient solutions for the cities that are looking for an upgrade of their living conditions. Environmental and sustainability preoccupations need to be reinforced. Phuket has incorporated the concept and is on the good way towards a more sustainable development.
2.1 Public transport can also protect and revitalize cultural heritages

Phuket has become a worldwide iconic site in terms of tourism. However, only few visitors know that Phuket has a very long and rich history and used to be a connecting node between the Chinese, Indian, and European civilizations through the ancient maritime “silk road”. The newly opened Peranakan Museum pays tribute to a remarkable and pluri-secular typical culture but this heritage would deserve to be better included in the international image of Phuket and then to be able to be visited by local and tourists on a sustainable manner. A public transport solution to be designed and implemented might be one tool for that.

Phuket has a very long and rich history and used to be a connecting node between civilizations.

Cultural heritages are transmitted through languages, ideas, and daily practices but also encompass monuments and housings, which also reflect the genius of a community. The protection and renovation of the huge heritage of the centre of Phuket City, which can be found in the twin island of Penang, has become a priority for the Municipality, as exposed during the workshop (see below), knowing that probably complementary actions and solutions could be implemented, not only by private sector but also by public authorities.

At-grade public transport projects can efficiently help protecting historic centres (reduction of traffic flows, air pollution) while boosting local economy.

Then, an at-grade public transport project can efficiently help protecting historic centres thanks to the reduction of traffic flows and therefore air pollution, while boosting local economy in bringing local and tourists on a sustainable manner to this Phuket City centre. Many prestigious historical centres have reduced car traffic during the last decades, and even become car-free areas to favour an urban regeneration process and a peaceful discovery for all visitors. This was done thanks to step-by-step measures like the reorganisation of the traffic to other axis, the diminution of the speed limit in the historical center, the organisation of car-free event and car-free days, the resizing of walkways, the deviation of car traffic and the creation of new transportation modes.
FOCUS 4:
Phuket, between tradition and modernity

Many heritage buildings of Phuket city conjointly belong to the Municipality and to the Department of Treasury. From the times of the ancient Chinese seamen, passing by the Portuguese era and up to the contemporaneous period, Phuket has always been an extraordinary cultural melting-pot.

Phuket is essentially multicultural: three religious cultures peacefully live together, many people speak several languages and the various types of housing reflect those continuous exchanges. Phuket has also heavily contributed to the development of what might be called South Thai Culture, with a typical “southern style” language, and its own vernacular food culture.

The Old town of Phuket tries to preserve its traditions, while fully accepting to be a vibrant centre of interest for foreign visitors and local communities as well. The Municipality of Phuket wishes to keep on combining tradition and attraction in the Old city and will sustain private or public initiatives going into that direction.

When it comes to the integration of a mass transit system in a historical city centre, at-grade systems turn out to be the most suitable mode. They are useful tools to preserve city centres. Accessibility can also be facilitated by the creation of pedestrian zones. Safety is not an issue since reliable technologies are available to manage the cross sections and give priority to both LRT and pedestrians.

Having a dynamic and attractive city centre is more efficient than expanding urban areas in the outskirts, which is costly in terms of associated infrastructures. The trend is to prefer dense urban centres to an uncontrolled urban sprawl. At-grade systems such as LRTs are also a great tool to ensure a rejuvenation of the urban atmosphere. And it is also an interesting way to promote and highlight the local culture!

Mr. Kavee Tansukhatanon, Vice Mayor, Phuket Municipality

Some lessons have been learned from other experiences. Successful transport projects, which initiated or contributed to the modernization of a whole city, rely on a good team work, including multidisciplinary actors, a very wide urban diagnosis and a geographical approach at various scales.

Successful transport projects rely on a good multidisciplinary team work, a very wide urban diagnosis and a geographical approach at various scales.

In France, it is now admitted that all kinds of professional disciplines are necessary to design and implement a successful public transport project: transport engineers and transport architects, townplanners and landscapers, mobility specialists and experts in urban ecology.

The first mission of such group is to propose a geographical, social, cultural and environmental diagnosis and to suggest a holistic vision for the future, thanks to the mix of professional disciplines and experiences. The vision must remain simple and easy to understand, to have a chance of being shared by most stakeholders. This holistic vision will then allow the group of experts to come up with a concept relying on a multimodal approach and leading to a comprehensive mobility plan and an integrated network.

While it is necessary to plan for the short as well as the long term, it is also advisable to plan on various spatial scales: metropolitan scale, urban scale, neighbourhood scale, street scale. And at the same time, landscapers and experts in urban ecology will design a nice integration of greenery to reduce heat and climate change effects, connecting the project to an even wider global scale.
FOCUS 5:
Integrating at-grade systems in road intersection and in pedestrianised heritage centres

- At-grade systems and management of intersections: cross-roads and roundabouts.

- A major concern: safety of pedestrians. LRTs can harmlessly run at 20 km/h in city centres.

- Integration of stations within the neighbourhood: easy accessibility and an iconic sign in the city. Greenery can be implemented at stations of at-grade systems.
2.2 Preparing the mobility of our common future: combining solutions and phasing

A major concern is to rely on a sound estimation of the future demand of transport. All over the world, some projects have suffered from under or over-estimation of daily ridership leading to some awkward situations. In developing countries, a typical issue is whether a modern public transport project will be attractive enough for a rising middle-class whose transport choices seem today to be limited to private vehicles because of the lack of access to public, safe and reliable mass transport system. The general trend is that with some rising standards of living public transport shares are declining. But experience also shows that well designed publics transport projects can be overwhelmed by success and attract all kinds of customers.

It is, therefore, advisable to rely on sound and numerous field surveys and to benchmark the project with similar experiences. It is also recommended to plan a flexible project, able to cope with higher levels of demand in the medium term.

LRTs can cater to a wide range of demands, from 2,000 up to 15,000 passengers per hour and per direction, and from this point of view, they can be a flexible solution depending on the short-term demand but also preserving the possibility of a steady increase of capacity over time. Of course, for a high capacity, it will be necessary to operate twin vehicles, 66 meter-long as a whole, with a reduced headway of 2 minutes. But experience shows that high capacity LRTs are nice tools to organize mobility in developing cities and to correctly serve their historical centres, like in many cities in France, or in Rabat in Morocco for instance.

**Figure 11: The twin-LRT of Rabat, Morocco**

LRTs can be a flexible solution, by preserving the possibility of a steady increase of capacity over time and combining intermodality.

Of course, other mass urban modes than LRT exist: metros (MRTs), urban trains, BRTs... But it is important including for financial reasons to carefully assess the opportunity of (most expensive) solutions based on the short and medium demand and to think on the way to make the transport network first reasonably respond to the current demand and second to evolve over time (see below). Multimodality has become a key word: how to wisely combine the use of all mobility solutions, walking, bicycles, traditional transport (paratransit), LRTs, buses and cars and then also to accompany the evolution of demand over time – while also working on demand management especially by planning. The design of a comprehensive mobility plan should propose a great and easy-to-understand concept, often relying on a priority given to modes that can be alternatives to private vehicles in the city centre.

Other solutions are not only infrastructures and rolling-stock: for years, we have been talking about digital revolution but now it is there, proposing low-tech and cost-effective tools for urban mobility. And the good news is that smart technologies are good friends of public transport. Public transport operators can now fully take advantage of a real-time monitoring thanks to abundant “big data” information coming back from the city: lengths of traffic queues at intersections, video information at main stations, precise location of all public transport vehicles.
FOCUS 6:
How to choose the adequate transport technology... and to combine the solutions?

In Kochi, India, the mobility backbone is made of a 26 km-long metro system (MRT) – co-financed by AFD in terms of investments as well as for soft expertise for the urban integration of the project –, which might be complemented in the future by a network of LRTs and BRTs: in the Indian context, it has been proved that LRTs are 2.5 less expensive than elevated metros, that then they can very well complement the MRT better than with MRT extension, and much attention has been paid to the identification of best routes for LRTs and BRTs. An integrated common transportation card, which can also be used as a regular credit card, allows the coexistence of fare policies varying with each mode, thanks to an adequate “mapping” system.

In Putrajaya-Ciperjaya, Malaysia, five LRT lines were originally planned for this new administrative city but studies showed that the ridership would not be sufficient. It was recommended to implement BRT routes in the short term, preserving the possibility to upgrade to LRTs in the long term.

In Surabaya, Indonesia, it was decided to rely on LRTs only, with the purpose to share depots and Operation Control Centre (OCC) to minimize costs of investment, operation and maintenance.

In Lima, Peru, AFD is funding the Metro Line 2. But a major problem has been raised to connect all inhabitants living in the eastern Chosica valley, directly coming from the famous Andes Mountains. Suburban LRTs (between suburban trains and tram-train), buses and road development have been studied to provide an adequate connection solution towards the terminal station of the future metro.

Today, passengers can also easily find their way in what used to be a “bus jungle”, thanks to rapid development of the mobile applications. Soon, it will be common to find a multimodal route combining a low-cost taxi, a bus and maybe a shared bicycle. And passengers will use a phone or any Near Field Communication (NFC) technology working on his credit card to quickly pay all sorts of transport operators.

Citizens can also, in real-time, give their feedback on the operation of public transport network and contribute to the enhancement of the system. Experience shows that citizens, especially from the younger generations, favour the development of new standards of living in the city, combining an intensive use of public transport and the development of a new economy. Co-working spaces, urban greenery, new economy and public transport make a very attractive global solution.

Technology can bring a positive effect, a benefit to everyone. City planners should consider the quick evolution of mobility technologies: Uber-style companies and carpooling practices for instance will require more and more dedicated spaces in tomorrow’s multimodal hubs. Future is already here, but this should not be a reason not to look forward, towards a term of 35 to 40 years, which is the minimum life duration for most transport infrastructures.
2.3 How to finance high-quality and efficient mobility projects in Thailand?

During a final session, the representatives of the PDMO of the Ministry of Finance provided some very relevant and precise information encouraging reflection among the participants for designing future transport projects in the country.

It should be first reminded that the Thai Government also plays a role in the LRT project in Phuket, despite the current lack of consensus, and that the Office of Transportation Planning (OTP) has carried out a complete feasibility study. The major concern about the LRT project seems to be the cost, as well as the funding aspect. More generally, there is a strong determination of the Thai government to support infrastructure investments, notably through fiscal policies. Despite the several incidents which have been affecting the economic growth of Thailand (subprime, European debt, change of central government), the current government succeeded in boosting the economic growth thanks to its long-term expansionary fiscal policy, using budget deficit.

Thailand’s deficit has reached a level of 162 Billion THB, and investment in transport sector represented 2.3% of the 2016 GDP. Until recently, investments were mainly concentrated on road projects, but more attention is now given to rail (see Highspeed train project to Chang Mai, doubling track projects all over the country, urban link to Bangkok airport, metro extensions in Bangkok, etc), port and mass transit projects. This recent trend is closely linked with the ambition of Thailand to increase its competitiveness and efficiency, and to challenge countries like Singapore and Malaysia (as per the ranking done by the World Economic Forum 2016).

To make it possible, the government should support the infrastructure agencies by investing in new projects, as it is being done with:

- The “Eastern Economic Corridor” (EEC) project, which would be the largest investment project in ASEAN, in terms of budget and area, and which will contribute in connecting the Region through infrastructures such as double-track railways, motorways, seaports, airports, innovation hubs…

- The “Special Economic Zone” project, which consists in the development of 10 border areas to connect the neighbouring countries and foster the economic development of the region through basic infrastructures.

Funding is particularly critical for public transport projects because of their potentially huge costs (high population density…) and low financial profitability. However, these projects are essential for the economic and social development of the

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5 “Financing Infrastructure Projects”, Presented by Jindarat Viriyataveekul, Executive Director of the Public Infrastructure Project Financing Bureau (PDMO), at the Thai-French workshop (23rd May 2017).
cities. In the latest Action Plan\textsuperscript{6}, 13.2 Billion dollars are dedicated to the extension of the MRT in Bangkok, as well as the improvement of the quality of service and safety of the system.

\textbf{Figure 12: Thailand invested Approx. $6 Billion/Year (1.8\% of GDP) in Transport Sector}

\textbf{Figure 13: Thailand Infrastructure Investment 2012-2016 (NESDP 11\textsuperscript{th} by Sector)}

\textsuperscript{6} “Financing Infrastructure Projects”, Presented by Jindarat Viriyataveekul, Executive Director of the Public Infrastructure Project Financing Bureau (PDMO), at the Thai-French workshop (23\textsuperscript{rd} May 2017).
How does PDMO determine financing criteria and how does it assess the financial sustainability of projects in Thailand for structuring the financing scheme including with national debt? Most of the projects go through Government borrowing, and all kind of borrowing instrument can be used: term loans, bonds, external borrowing, international bonds, etc. Regarding PPPs (Public Private Partnerships), the overseeing body (the State Enterprise Policy Office, SEPO) tries to reduce and simplify the process with the implementation of the PPP fast track procedure, which may reduce the processing time from 25 to 9 months, according to SEPO. So far, 20 transport projects have been delivered under PPP scheme, including the MRTA initial project “Chaloem Ratchamongkhon Line” and the initial BTS system in Bangkok (1999). The main advantages from PPPs, according to PDMO, is the efficiency during the procurement stage as well as the construction phase, as the risk is shared and/or transferred to the private partner.

However, other solutions are being experimented worldwide to reach the financial equilibrium in urban and transportation projects. London for instance has chosen to tax car drivers through “congestion charge” and parking tolls. In France, companies with more than 11 employees have to pay a contribution called “Transport tax”, which globally represents 30 to 40% of public transport investments in France.

However, other solutions are being experimented worldwide to reach the financial equilibrium in urban and transportation projects. London for instance has chosen to tax car drivers through “congestion charge” and parking tolls. In France, companies with more than 11 employees have to pay a contribution called “Transport tax”, which globally represents 30 to 40% of public transport investments in France.

FOCUS 7: “PPPs around the world”

A PPP is a joint involvement of the Government and the Private sector on a project with a different level of ownership and risk for the private partner, from “light” PPPs (service contracts) to “heavy PPPs” (concession contracts).

“Light” PPPs are mostly used in France, where the initial investment is made by the Public Transport Authority, but the O&M is outsourced to a private company who carries the commercial and industrial risk (net cost management contract).

In Hong-Kong, the public subsidy takes the form of public land which is granted to the Authority (MTRC). O&M is managed by a private partner, under a PPP net-cost contract, and the funding partially comes from property development and advertising (16% of the revenues in 2012).

In Dhaka (Bangladesh), the public authority has decided to implement a Mobility Hub under a “concession contract”, where the initial capital is provided by the private partner but ultimately, the ownership is transferred to the public entity.
3.1 What will be the future of Phuket?

Public health has become one of the government’s focus in Thailand, and the Government has clearly expressed that the development of urban public transport projects, including water transport, might be a useful tool to move towards healthier Thai cities.

What will be the future of Phuket? What will be the practices of foreign visitors within 30 to 40 years? How will Phuket cope with the threat on its ecological resources? How will all local communities and cultures evolve during the next decades? What will be the identity, who will be the residents of tomorrow’s Phuket? What do the authorities want for Phuket island and City and how can they act towards clear and shared goals? While we can’t answer precisely those questions, we can thoroughly analyse the present trends to suggest useful orientations allowing a maximum flexibility, on the way towards a desirable future.

A closer look shows that the core structure of Phuket relies on a cross shaped by two complementary axes: a long north-south metropolitan axis formed by the NH 402 and a shorter east-west urban axis stretching from Saphan Hin to Patong and crossing exactly in the middle of the Old Phuket town. Can this be considered as the basis for a joint metropolitan/urban development combining various scales?

Figure 14: Concept of two complementary axes: a white North-South corridor (current project) or yellow alternative (strictly H402) and an East-West corridor in red from Patong to the future Congress Centre (source: Pedro B. Ortiz, PDMO-AFD workshop of May 24th, 2017)
Of course, all efforts have to be reasonably phased according to the objectives and to the demand, then to be implemented over various chronologies; and financial sustainability of transport shall be looked at carefully.

During a first brainstorming session during the workshop, all participants brought very valuable contributions to all those issues. Phuket should continue and intensify the efforts towards more sustainability by taking measures for more sustainable equipment in the tourism sector, more sustainable transport solutions to reach the touristic places, etc. This idea to redirect tourism practices towards more ecological-friendly habits was mentioned several times, as well as the combination of such new practices with the development of new economic areas, located in the centre of the island for instance. The development of other activities than tourism must be carefully discussed among authorities, especially regarding the choice of the location of such future activities. A target might be to attract visitors for both leisure or and business purposes. The Laguna area in the south-east, where the implementation of a modern and iconic Congress Centre is being envisaged, might indeed be a very interesting place to develop such an infrastructure of mixed tourism.

3.2 Be a city healer and take good care of the island of Phuket!

During a second brainstorming session, the participants were asked to act as “city healers”. We sounded out what their recommendations to Phuket would be to continue living in a healthy environment and prevent the negative impacts of tourism.

Interestingly, a major and consensual proposal was to protect a large part of the Old town, 3 to 4 sq.km, from excessive car traffic; it was even mentioned, among the local participants, that cars should be banned only during a part of the day. Three main parking facilities might be implemented at the edge of this preserved area. Cycling could be promoted through the implementation of bike lanes. Water taxis might connect this ecological city centre to other harbours disseminated along the coast of the Island.

Necessity to rely on an integrated network combining LRTs and other modes.

Technology might be used to upscale the level, and the idea to develop the University area, located on the urban east-west axis, as a smart city was evoked. A way towards a high-tech 21st century Phuket? And of course, the necessity to rely on an integrated network combining LRTs and other modes was also mentioned.
It was mentioned that the LRT shall not go through the city centre, but rather be constructed on the new NH 402, directly serving the various shopping malls stretching along this backbone. The main idea would be in this case to directly serve the newly developed zones of Phuket. A second level of public transport could be provided to commute from LRT to car parking spaces, hospitals, and other facilities which are not directly located on the LRT alignment, as feeder services. Moreover, the stability of bus schedules should be granted, with efficient passenger information and the development of smart stations.

Conciliating smart city and local economy.

It was pointed out that this large Old Town pedestrian-friendly area might be a perfect site to attract new and high-quality leisure and economic facilities. It might set up a new standard for Phuket green and smart City, and encompass in some places Transit Oriented Development (TOD) operations\(^7\), as well as new iconic facilities like a sport centre or a Congress centre, as mentioned previously.

But what should be promoted first is the change in the urban culture, through the organization of sensitisation campaigns at schools and universities. The minimum age for driving could be increased from 15 to 18 years to fight road insecurity. It was even suggested to bring restrictions to purchase cars and to limit the provision of parking spaces like in Singapore. Additionally, traffic laws should be amended to better take into consideration modern habits. Since the Municipality needs more revenues, part of it might come from additional taxes or fees applying to the car users.

### 3.3 How to speed up high-quality and efficient mobility projects in Phuket?

The brainstorming sessions brought the idea that mobility projects should be designed to cater to the joint needs for transportation along two axes: the metropolitan North-South corridor – globally the one where the current LRT project is designed – and a urban East-West corridor. Indeed, this East-West corridor would complement (or modify) the current H402 LRT project by providing a connection to the beaches on the West part of the island, and particularly to Patong which is the most developed touristic area. In addition to potentially serve the tourists or at least the seasonal workers going to Patong, this East-West project would also benefit the locals by connecting Phuket City and the University area, located westward from Phuket City. On a city-scale point of view, the idea of an East-West axis would serve the major areas of interest: the universities, the old town, and also the future Congress Centre project. Although requirements are different on both corridors, short-term actions were identified.

The initial effort should concentrate on the development of walkable streets, where some bicycle lanes might be later implemented, and on the accommodation of more urban transversal axes. It is deemed urgent now to build the LRT project and more generally to re-organize the whole mobility structure on the island. Traffic management measures and the implementation of new parking facilities should accompany the opening of this major project. The use of electric vehicles should be promoted.

Local buses should be upgraded, using smartcards, and more generally, the practice of e-payment. The connection to the airport should not be neglected, and the idea to operate smart airport buses was mentioned. Finally, it was pointed out that, in the short term, the volume of services to the provinces on the Andaman side should be increased.

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\(^7\) TOD is a tool to organize urban development in connection with public transport infrastructures and services. The concept favours densification along the mass transit corridors, and the mix of land uses. An example presented in the workshops was the Grand Paris Express project, which combines the extension of 200 km of metro network with the construction of nearly 1.5 million dwellings and other urban developments.
3.4 Recommendations to fine-tune the already on-track LRT project

- Regarding the demand: Any ridership profile & fundamental change?

Based on the workshop sessions, the first recommendation would be to take a closer look at the alignment and ridership estimation. It may be necessary to assess the tourist willingness to use such LRT once they arrive, with luggage, knowing that most of the hotels and touristic places are not located on the corridor.

Also, the current alignment plans to deviate from H402 and enter the Old Town of Phuket. It could be the occasion to push for a car-free city, with access only for pedestrians, bicycles, and public transport modes. From a different perspective, the H402 forms the main economic backbone of the island, gathering major shopping centres. Both alignments might be compared again.

The University, also considered as a major strategical point for the island in terms of economic and knowledge resources, and which creates important traffic movements for locals, is not connected by the LRT project. It may be a good idea to complement the current studies for the proposed North-South alignment by analysing an east-west connecting link.

An East-West connection would cater to the needs of local people going from the city-centre of Phuket to the University and the shopping and business areas along the H402, and to the needs of tourists through a possible long-term extension towards Patong. It would benefit the seasonal workers and would attract more tourists to the Sino Portuguese heritage of the Old town. Looking at the long-term planning, a Congress Centre could be set up on this east-west corridor, located eastward of Old Phuket Town, in Saphan Hin district.

It may be a good idea to complement the current studies for the proposed North-South alignment by analysing an east-west connecting link.
Figure 17: Proposal for an East-West connectivity (in red). The yellow represents the alternative to the current white North-South corridor, by following the H402 whereas the current LRT project enters the Old Town (Historical Center).
(source: Pedro B. Ortiz, PDMO-AFD workshop of May 24th, 2017)
Regarding the calendar: what are the priorities?

Thinking about short-term and long-term planning, another recommendation could be to implement the project in distinct phases. It is rare for the Central Government to allocate such amount of money at one go for an infrastructure project. Phasing the project, for instance, by starting with a section of 10 km, could simplify the funding process and approval loop by the Cabinet.

Phasing the project could simplify the funding process.

The question is: which section is a priority? Can the urbanised area of Phuket City be part of a pilot project? Or should the airport be connected to an at-grade public transport system in priority?

Working first on the centre of the island and the urbanized areas while keeping in mind the connection to the airport?

It seems more relevant to start such project in an urbanised area, especially because the project would then be dedicated to more users and then more economic and financially sustainable. But, to be successful, it must be included in a comprehensive approach of a change of paradigm, from cars and streets congested by private vehicles to public transport modes and pedestrian friendly zones. It is also true that saying this, the airport-to/from-beaches-and-City traffic has to be assessed. The combination of both issues might be the core of the further steps in preparing and implementing such a project in Phuket: working first on central island with keeping in mind the connection to/from the airport.

Keeping the big picture in mind

Finally, a recommendation would be to be attentive to the choice of mode for both corridors that will be developed for public transport. The choice of mode is a major issue to ensure the success of a public transport project, for now, but also for the future. A forecast of the possible evolution of the ridership on the corridor, but also the demand for mobility on the island, should be carefully evaluated.

A forecast of the possible evolution of the ridership on the corridor, but also the demand for mobility on the island, should be carefully evaluated to choose the most adequate mode.

For the North-South corridor, such estimation could bring to the conclusion that a Bus Rapid Transit (BRT) system could be suitable (especially regarding the demand and the capacity of each system) combining both technical and financial issues. This kind of system could also easily prefigure a heavier system (in terms of capacity) such as rail-based mode (LRT, Tram-train) that is designed today.

For the East-West corridor, an assessment could be useful to ensure that this idea raised during the workshop can fully address the expected requirements, for both locals and tourists, and to complement or redesign the current LRT alignment.
For both corridors, an important consideration is multimodality and the major points of junctions between the public transport corridor and the other modes. Of course, parking spaces for private cars, park & ride facilities and drop-off zone for tuk-tuk and taxis should be included in the design of the intermodal hubs. But initiating a mass public transport system on the island should also be a first step towards the active development of non-motorised transport solutions. Thus, the design of car-free zones, pedestrian zones, public spaces, bicycles lanes, bike parking could also be included in the design of the stations and all along the corridors. Other public modes of transport could also be initiated on the island to provide a complete service from/to any major point of interest: the airport, the old town, the pier, the Two Heroines Monument, but also the commercial zones of the H402, the university, the touristic areas of the west coast, the south of the island, and why not providing an access to the national park and preserved areas of the north-east part of the island. A complementary system could be studied in such locations, or at least a feeder system to provide the last-mile connectivity to the commuters. This could rely on the existing bus fleet (pink trucks and blue open-air buses) for instance.

Initiating a mass public transport system on the island should also be a first step towards the active development of non-motorised transport solutions.
CONCLUSION

While big metropolises like Bangkok need to rethink their development to be competitive in tomorrow’s world, they also require a good integration with the natural landscape to ensure a high quality of life. This is also the case for smaller metropolis in Thailand, and especially for Phuket.

Phuket is changing a lot, and this raises so many questions: how to ensure a smooth and fruitful cohabitation between local inhabitants, foreign residents, workers and tourists? What is the vision of the future for Phuket? Is it going towards a diversification of activities (marina hub, congress centres, medical activities, smart city)?

Many mobility projects (new airport, new highway, tunnel to Patong, widening of H402, LRT) are envisaged today but they probably face financial constraints. In any case, they should be organized as a new integrated mobility system, which might require further actions: first, complementary studies and this for several reasons, one being a more convincing justification to attract the financiers, second, a strong coordination between stakeholders including between national and local ones, as in every project of that magnitude in the world.

The major recommendation from the workshop is that a short-term project should be identified for the central part of the island, reasonably connected to the airport, for mobility issues and also because Phuket is at the crossroad of many cultures and there is a strong political will to preserve and promote this living heritage. A revived Phuket Old Town would be an asset to attract higher-standard visitors and then to boost the local economy on a sustainable manner.

A large car-free City-centre, extending from the Andaman sea up to the central mountain ridge, might become the vibrant heart of the island generating economic activities.

This large pacified central area will also be the crossroad between a North-South metropolitan mobility backbone (H402) and a more local East-West connection from shore to shore.

A well-conceived, integrated and cost-effective at-grade public transport system might help to get rid of traffic jams and serve the main places of interest of this large pacified area, providing also solutions for East-West connectivity. Basic intelligent transport technologies can also help to realize this vision, as well as simple cost-effective measures that might be implemented in the short-term.

A mass transit project to be integrated in a multimodal long term network for the sustainable economy of Phuket island.
The French Agency for Development (AFD) is willing to work with Thai authorities in upscaling the existing public transport system through the implementation of a mass transit system in Phuket and other combined solutions, all together for the benefit of the local population and the local economy as well as to preserve the environment and the heritage and act for a sustainable development.

AFD is willing to work with Thai authorities in upscaling the existing public transport system through the implementation of a mass transit system and other combined solutions in Phuket.

As suggested at the end of the workshop and in Bangkok with authorities, AFD has proposed to continue working with national and local authorities to share views on the LRT project as designed in Phuket and more globally on mobility solutions on the island and in the City, in terms of design, preparation and implementation over the years.

First, a complementary short technical expertise would take place in Phuket in the coming months for strengthening the above recommendations, followed by a third workshop gathering all stakeholders in order to share the results of the expertise from the workshops and to envisage the further steps.

Then indeed, if a real need from the local and central authorities is expressed and a long-term interest in cooperating with AFD towards the financing of such a project is confirmed, the central area of the island as the crossroad of both North-South and East-West corridors, connected at a larger scale in a multimodal network on the island, could be explored in terms of detailed design within the framework of a study financed by AFD.
# APPENDIX

## PROGRAMME

Day #1 - Tuesday, 23rd of May 2017

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<tr>
<th>TIME</th>
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<td>9:00 – 9:30</td>
<td>Welcome of the participants</td>
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<tr>
<td>9:30 – 9:50</td>
<td>Opening session</td>
<td>• Mr. Kavee TANSUKHATANON, Vice Mayor, Phuket City Municipality</td>
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<td>Opening speech by Thai and French authorities</td>
<td>• Mrs. Jindarat VIRIYATAVEEKUL, Director Public Infrastructure Project Financing Bureau, PDMO</td>
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<td>• Mr. Eric SAYETTAT, Service Economique Director, French Embassy in Thailand</td>
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<td>• Mrs. Ariane DUCREUX, AFD Regional Director</td>
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<td>• Mr. Sanit SRIVIHOK, Deputy Governor of Phuket</td>
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<td>9:50 – 11:30</td>
<td>Session 1 - It is time to metamorphose our cities!</td>
<td>• Mr. Pedro B. ORTIZ, Metropolitan Expert</td>
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<td></td>
<td>Through an analysis of urban shapes at various scales, from the metropolis to the neighbourhood, Mr Ortiz questions the future of cities. What will be the next trends and what consequences on urban mobility?</td>
<td>• Moderator: Mr. Etienne LHOMET, Public transport Engineer</td>
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<td>11:30 – 12:30</td>
<td>Session 2 - Rethinking our mobility for natural and healthier cities</td>
<td>• Mr. Siwaphong THONGJUE, Urban designer and Architect</td>
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<td>Citizens ask for green and healthy cities. It will be necessary to drastically change our mobility patterns to reach this objective.</td>
<td>• Mr. Pedro B. ORTIZ, Metropolitan Expert</td>
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<td>• Moderator: Mr. Etienne LHOMET, Public transport Engineer</td>
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<tr>
<td>12:30 – 14:00</td>
<td>Lunch break at The Blue Elephant</td>
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<td>14:00 – 14:45</td>
<td><strong>Session 3 - How to implement and integrate the LRT project of Phuket? Lessons learned from other countries</strong>&lt;br&gt;The implantation of the LRT project in Phuket raises a number of issues: landscape and urban integration, management of intersections, accessibility of stations. Many cities have been through this process, what are the best practices?</td>
<td>• Mr. Denis FUENTES, Transport Architect&lt;br&gt;• Moderator: Mr. Etienne LHOMET, Public transport Engineer</td>
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<td>14:45 – 15:30</td>
<td><strong>Participative Session #1 - Imagining a brand-new mobility system for Phuket!</strong>&lt;br&gt;With the LRT project and the expected road widening, Highway 402 will become a modern and powerful mobility backbone. How to make sure that all territories of the island will benefit of those major investments? Maps and markers are available!</td>
<td>• Moderators: French Experts</td>
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<td>15:30 – 16:30</td>
<td><strong>Session 4 - How to finance high-quality and efficient mobility projects in Thailand?</strong>&lt;br&gt;Answers and advises will be given by both Thai and French financial experts.</td>
<td>• Mrs. Jindarat VIRIYATAVEEJKUL, Director Public Infrastructure Project Financing Bureau, PDMO&lt;br&gt;• Mrs. Marion HOYEZ, Project Manager, CODATU&lt;br&gt;• Moderator: Mr. Etienne LHOMET Public transport Engineer</td>
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<td>16:30 – 16:45</td>
<td><strong>Main conclusions of Day #1</strong>&lt;br&gt;Based on the experiences presented today (especially the Phuket LRT project), what are the next steps to integrate and continue this project?</td>
<td>• Moderators: CODATU</td>
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## PROGRAMME

### Day #2 - Wednesday, 24th of May 2017

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<tr>
<th>TIME</th>
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<td>9:00 – 9:30</td>
<td>Welcome of the participants</td>
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| 9:30 – 10:15| Session 5 - Historical centers and modern public transport projects: a success story? | • Mr. Kavee TANSUKHATANON, Vice Mayor, Phuket City Municipality  
• Mr. Pedro B. ORTIZ, Metropolitan Expert  
• Mr. Denis FUENTES, Transport Architect  
• Moderator: Mr. Etienne LHOMET, Public transport Engineer |
| 10:15 – 11:15| Participative Session #2 - How to heal the city? A session of urban acupuncture | • Moderator: Mr. Pedro B. ORTIZ, Metropolitan Expert |
| 11:15 – 12:00| Session 6 - How to choose the adequate transport technology?             | • Mrs. Marion HOYEZ, Project Manager, CODATU  
• Mr. Etienne LHOMET Public transport Engineer  
• Mr. Denis FUENTES, Transport Architect  
• Mr. Benoit BERGERON, Deputy Director for Rail, EGIS Rail  
Mr. Denis FUENTES, Transport Architect  
• Moderator: Mrs. Laura CORNELIS, Urban Geographer |
<p>| 12:00 – 13:30| Lunch break                                                            |                                                                                             |</p>
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<th>TIME</th>
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| 13:30 – 14:15| **Session 7 - Smart city and mobility: latest ideas!**<br>Mobility experts have warmed for years on the expected impacts of 'big data and open data', new mobile devices, and autonomous vehicles. They are already here! How to take the best from them? | • Mr. Pedro B. ORTIZ, Metropolitan Expert  
• Mr. Denis FUENTES, Transport Architect  
• Moderator: Mr. Etienne LHOMET, Public transport Engineer |
| 14:15 – 15:00| **Participative Session #3 - A road map to speed up high-quality and efficient mobility projects in Thailand**<br>For each city, how to organise the transport and urban projects according to their priority of implementation? | • Moderators: CODATU |
| 15:00 – 15:15| **Main conclusions of the workshop**                                                          | • Moderators: CODATU |
| 15:15 – 15:30| **Official closing words**                                                                     | • Mr. Stéphane CARCAS, Project Manager, AFD Headquarters |
Mr. Denis Fuentes

Trained as an architect, and an expert in city and public transport planning, Denis Fuentes is a transport architect expert, he was head of SUEZ’s Urban and Regional Mobility Unit until 2016. For over 30 years, Denis has been actively involved in exploring city planning and transit issues as a consultant. He has participated in the design of Exclusive Right of Way networks, feasibility studies of underground lines and tram systems, Bus with a High Level of Service (BHLS) and BRT schemes and urban cable car projects, both in French cities and internationally (Spain, Portugal, Morocco, Switzerland, Sweden, Asia, Middle East and Latin America). He has carried out studies of High Speed Rail stations and interchange hubs within the context of urban development schemes, and he also shares his expertise within working groups on the theme of the Sustainable City and in his teaching activities at the École Centrale of Lyon.

Mrs. Marion Hoyez

Marion Hoyez has a political science background: she studied both at the Institutes of Political Science of Strasbourg and Rennes. In Rennes, she did a Masters in ‘Urban Services in Developing Countries’ and specialized in Mobility in her internship with CODATU, at the Institute of Urban Transport (New Delhi). She was then posted as ‘Cooperation Project Manager’ in Kochi (India), as part of a two-year technical cooperation between AFD, SYTRAL (Transport Authority of Lyon City), Kochi Metro Rail Limited (KMRL) and CODATU. She is now ‘Project Manager’ for CODATU and works on various projects, mainly city-to-city cooperations.

Mr. Etienne Lhomet

Etienne Lhomet is a transport engineer with more than 25 years of experience in the fields of transport planning and has been instrumental in the implementation of public transport projects management in Europe (Bordeaux, Toulouse, Nice, Lyon, Lisbon, Liege) and abroad (South America, West Africa, China, India, Bangladesh). He recently founded a consulting firm called Des Villles et Des Hommes (meaning “cities and people”), and works for CODATU as a transport expert.

Mr. Pedro B. Ortiz

Pedro B. Ortiz is currently a Visiting Professor at Milano Politecnico University (Italy) as well as Senior Urban Consultant for international governments and multilaterals, as the World Bank, European Union, United Nations, the Inter-American Development Bank or the ADB. He has metropolitan management experience for 30 years in five continents. He was the founder and Director of the Master for Urban Planning of King Juan Carlos University in Madrid, after being Director General for Regional Planning and Urbanism of Madrid Region, and Deputy Mayor for Madrid in charge of Strategic Planning. He made the Strategic Plan of Madrid in 1994 and the Metropolitan Plan 1996-2016. You can find more about Pedro’s work at www.pedrobortiz.com.
Mrs. Jindarat Viriyataveekul

As the director of Public Infrastructure Project Financing Bureau under the Public Debt Management Office (PDMO), Ms. Viriyataveekul has been assigned to oversee financial plan for economic infrastructure projects. She coordinates with official Financial Institutions/other funding sources and implementing agencies on financing in investment projects and program by Bank Loan, Public & Private Partnership-PPP. In addition to these tasks, in 2015 she has been assigned to set up a new bureau responsible for public projects management, monitoring and evaluation. This is due to the current main source of Thailand public projects borrowings are from domestic loans which PDMO has to take responsibility on loan allocation, loan disbursement, project monitoring, and project evaluation upon completion.

Mr. Siwaphong Thongjue

Lecturer Siwaphong Thongjue holds a master’s degree in Urban design from the Faculty of Architecture Silpakorn University (2010) and undergraduate Bachelor of Industrial Education (Architecture) Second Class Honors, King Mongkut’s Institute of Technology Ladkrabang (2006). Siwaphong currently works as a lecturer in Architectural Technology Faculty of Science and Technology Phuket Rajabhat University (Phuket province, his native town) His experiences include environmental impact analysis (previous work: Environmental Consultant and Land Development), New Urban Planning based on Smart Growth and New Urbanism design. His passion also expands into sustainable architecture and urban design.
**ORGANISERS AND PARTNERS**

**Agence Française de Développement (AFD)**

AFD, the Agence Française de Développement, is a public development-finance institution that has worked for seventy years to alleviate poverty and foster sustainable development in the developing world and in the French Overseas Provinces. AFD executes the French government’s development aid policies.

Working on four continents, with seventy-one field offices and bureaus, AFD provides financing and support for projects that improve living conditions, promote economic growth, and protect the planet. In 2013, AFD committed € 7.8 billion to projects in developing and emerging countries and in the French Overseas Provinces. These AFD-financed projects will provide schooling for children, improve maternal health, promote equality between men and women, support farmers and small businesses, and bolster access to drinking water, transportation and energy. These newly-funded projects will also help mitigate climate disruption by abating nearly 3.3 million metric tons of carbon dioxide-equivalent annually.

In Thailand, AFD Bangkok regional office works closely with local institutions with an aim to promote green and inclusive growth through a variety of financing tools tailored to its partners’ need. As an international donor with long history in financing public transport projects globally, AFD actively seeks opportunities to contributing to Thailand’s urban transport development plan and sharing its vision with local stakeholders.

**Public Debt Management Office (PDMO)**

A specialized public entity under Ministry of Finance tasked with a mission to formulate sound public debt management policies and strategies as well as conduct, monitor and evaluate public debt operations under relevant legal framework and guidelines.

Aside from pro-actively managing Thailand public debt, fostering sustainable economic and social development has long been held as PDMO vision and its core value. PDMO regularly hosts and co-hosts several events aiming to strengthen capacity and knowledge among government and related agencies on development projects.

**CODATU**

CODATU gathers the different stakeholders of transport and urban mobility: local authorities and government departments, universities and research institutes, private companies and individual consultants. The association was founded in 1980, following the World Conference on Urban Transport in Dakar. It aims to stimulate the exchange of knowledge and know-how to promote the implementation of sustainable urban mobility policies in developing countries. It organizes international conferences, offers trainings to the leaders of the South and regularly publishes books on this topic. Moreover, CODATU support cooperation between local governments in the field of transport and urban mobility.
Since 2011, DVDH – Des Villes & Des Hommes (Cities and People) – provides services to communities with its expertise in the design of projects linked to urban planning and mobility. The society’s scope of work is extended from the local to the international level, offering assistance to set up site public transport projects, restructuration of public transports’ networks, definition of mobility policies or urban sustainability policies, researches for transport strategy, institutional support or even workshop and conferences organisation. DVDH is involved both in Europe (France, Belgium, Switzerland) and in developing countries (Southeast Asia, Latin America, West Africa).

The company’s activities aim at implementing efficient policies and projects in order to move towards a real sustainable development regarding economic, social and environmental issues. To succeed its ecological mutation, cities need strategic, practical and effective proposals. Building on its experience and know-how, DVDH gets into position as an accelerator of urban change, providing an integrated vision concerning mobility issues.

Through its network of key partners combining architects, urban planners, landscape designers and specialized consultancy of engineering, DVDH gives priority to a multidisciplinary approach, guarantee of success in urban projects. Multidisciplinary is also reflected in the company, with engineering, geography, cartography, and urban sociology skills.
The two-day workshop “Transports in the city: how to speed up high-quality and efficient projects?” took place on the 23rd and 24th of May 2017 in Phuket, Thailand. This Thai-French event was co-organised by the Public Debt Management Office (PDMO) of the Ministry of Finance of Thailand and the French Agency for Development (AFD), and was a sequel to a first event organised in November 2016 in Bangkok.

Designed by CODATU, a French-based NGO promoting sustainable urban mobility in the developing world, the workshop focused on the design, integration and implementation of high quality public transport projects in Thai cities. This second seminar particularly focused on the potential issues the Province of Phuket could be facing in terms of Urban Transport development and how to address them.

This document summarises the essential discussions and presents the main conclusions of the event.