



MEKONG
INSTITUTE



Completion Report

REGIONAL CONSULTATION WORKSHOP ON
"THE GMS TRANSPORT INFORMATION CONNECTIVITY"

APRIL 19-21, 2017
MEKONG INSTITUTE, KHON KAEN, THAILAND



ACKNOWLEDGEMENTS

Mekong Institute (MI) is very grateful for the cooperation and support from:

- (i) National Institute of Posts, Telecommunications and Information Communication Technology (NIPTICT), Ministry of Posts and Telecommunications of Cambodia (MPTC), RTC Co., LTD., Intra Co., Ltd., Cambodia Freight Forwarders Association (CAMFFA);
- (ii) Lao PDR Ministry of Public Works and Transport (MoPWT), Lao PDR Ministry of Public Works and Transport (MoPWT),
- (iii) Myanmar Ministry of Transport and Communications (MoTC), Myanmar Mercury Int'l Co., Ltd., Myanmar International Freight Forwarder Association (MIFFA), Awards Group of Companies in Myanmar;
- (iv) Yunnan Province Department of Transport, Yunnan Province Road Transport Administration, Section of International Road Transport Cooperation, Division of International Cooperation, Yunnan Gold Peacock Transportation Group Co., Ltd., Yunnan Transportation Group Co., Ltd.;
- (v) Thailand Ministry of Transport, LEO Global Logistics Co., Ltd., Logistics Research and Development Institute of the University of the Thai Chamber of Commerce (UTCC);
- (vi) Viet Nam Ministry of Transport, Viet Nam Automobile Transport Association (VATA), and Viet Nam Trucking Association.

Our special thanks to the central Government of the People's Republic of China (PRC), and the local Government of the Yunnan province for their continued support and presence at the regional consultation.

Important contributions to the regional consultation were made by the working group of Trade and Investment Facilitation (TIF) Department, Mekong Institute (MI), and the three external consultants and facilitators, namely (i) Dr. Manzul Kumar Hazarika, (ii) Ms. Christine Soutif and (iii) Mr. Angga Bayu Marthafifsa.

We are also thankful to all MI staff members for their kind assistance to the success of the consultation workshop.

The Report presents the consultation results formed from the insights and suggestions of the delegates from the six GMS countries attending the consultation during April 19 - 21, 2017. Judgment in this report, if any, merely reflects the perspectives of MI.

Mekong Institute

May 2017

ABOUT MEKONG INSTITUTE



Mekong Institute (MI) is an Inter-Governmental Organization (IGO) working closely with the governments of six countries in Greater Mekong Sub-region (GMS), namely Cambodia, People’s Republic of China (PRC), Lao PDR, Myanmar, Thailand and Vietnam, to promote regional development, cooperation and integration by

offering standard and on-demand capability development programs across three themes of Agricultural Development and Commercialization (ADC), Trade and Investment Facilitation (TIF), and Innovation and Technological Connectivity (ITC)

MI’s vision is for capable and committed human resources working together for a more integrated, prosperous and harmonious GMS. MI’s mission is to contribute through human resource development and capacity building to the acceleration of sustainable economic and social development and poverty alleviation in the Greater Mekong Sub-region and promote regional cooperation and integration”. Aligning with its stated vision and mission, MI’s program framework covers the following key thematic pillars, as shown below:

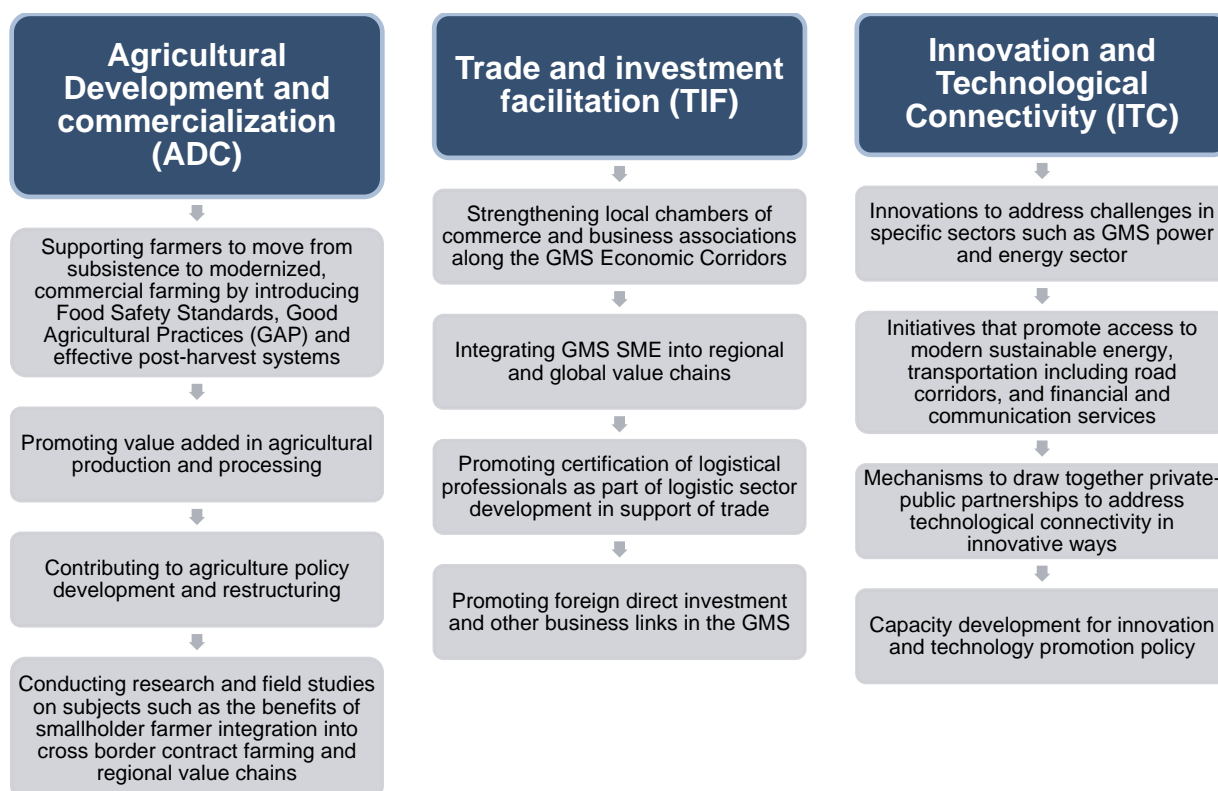


Table of Contents

ACKNOWLEDGEMENTS.....	i
ABOUT MEKONG INSTITUTE	ii
EXECUTIVE SUMMARY	iv
I. INTRODUCTION	1
II. OBJECTIVES AND ANTICIPATED OUTPUTS	2
2.1. Objectives	2
2.2. Expected Outputs	3
III. Consultation Process	3
IV. Consultation on the GMS Transport Information Connectivity (GTIC).....	6
4.1. Opening.....	6
Welcome Remarks	6
Opening Remarks	6
Consultation and Program Overview	7
4.2. The GMS Connectivity and Development	8
4.3. Information and Communications Technology (ICT) and Connectivity in the GMS	11
4.4. ASEAN Connectivity	12
4.5. National ICT Infrastructure and Connectivity Development Status in Cambodia, Lao PDR, Myanmar, People’s Republic of China (PRC), Thailand, and Viet Nam.....	13
A. Cambodia	13
B. Lao PDR	13
C. Myanmar	14
D. People’s Republic of China (PRC).....	14
E. Thailand	15
F. Viet Nam	16
4.6. Needs and Significance of the GMS Transport Information and Connectivity and Assessment of the Feasibility of the GTIC.....	17
4.7. Technology-Based Solutions for the GTIC System	24
Main Framework	24
Data Bank Module.....	25
Map Module	26
Navigation Module	27
Vehicle and Trailer Status Monitoring Module	28
4.8. Project Design.....	31
V. The Way Forward and Consultation Closing	35
VI. Annexes	36
6.1. Program Agenda	36
Day 1. Wednesday, April 19, 2017	36
Day 2. Thursday, April 20, 2017	37
Day 3. Friday, April 21, 2017.....	38
6.2. Delegates.....	39
6.3. Organizing Team.....	43

EXECUTIVE SUMMARY

The key purpose of the regional consultation was to ascertain country needs and priorities with regards to the establishment and development of the GMS Transport Information Connectivity. To this end, the consultation aimed to offer a highly interactive platform where the GMS countries' representatives shared and exchanged their insights of transport connectivity and the development of the transport information connectivity in the Greater Mekong Sub-region (GMS) from their national perspectives. The consultation process was facilitated by MI.

A total of 25 delegates attended the consultation representing the (i) National Institute of Posts, Telecommunications and Information Communication Technology (NIPTICT), Ministry of Posts and Telecommunications of Cambodia (MPTC), RTC Co., LTD., Intra Co., Ltd., Cambodia Freight Forwarders Association (CAMFFA); (ii) Lao PDR Ministry of Public Works and Transport (MoPWT), Lao PDR Ministry of Public Works and Transport (MoPWT), (iii) Myanmar Ministry of Transport and Communications (MoTC), Myanmar Mercury Int'l Co., Ltd., Myanmar International Freight Forwarder Association (MIFFA), Awards Group of Companies in Myanmar; (iv) Yunnan Province Department of Transport, Yunnan Province Road Transport Administration, Section of International Road Transport Cooperation, Division of International Cooperation, Yunnan Gold Peacock Transportation Group Co., Ltd., Yunnan Transportation Group Co., Ltd.; (v) Thailand Ministry of Transport, LEO Global Logistics Co., Ltd., Logistics Research and Development Institute of the University of the Thai Chamber of Commerce (UTCC); (vi) Viet Nam Ministry of Transport, Viet Nam Automobile Transport Association (VATA), and Viet Nam Trucking Association.

This report presents the outcomes of the consultation in a sequential manner, sets out factual information, reflects on achievements, and then concludes with recommendations arising from the representatives from Cambodia, Lao PDR, Myanmar, the People's Republic of China (PRC) as represented through the Yunnan province, Thailand, and Viet Nam.

The following outcomes were derived from the interactive sessions under the aforementioned event. As planned, these outcomes will be provided to the representatives of Ministries and concerned organizations in the GMS for review and further recommendations before the project on the GMS Transport Information Connectivity (GTIC) is proposed and developed in the near future.

- 1) The feasibility of the GMS Transport Information Connectivity (GTIC) was assessed and agreed by the country representatives in line with the emerging need of:
 - ✓ Transport information, especially land transport information;
 - ✓ An effective information sharing mechanism among the stakeholders in the GMS countries to narrow down the information gaps;
 - ✓ Establishment of a sub-regional transport information system in connection with the national transport-related database in each country
- 2) The development of the GMS Transport Information Connectivity (GTIC) is also aligned with the national ICT development status of each GMS country, and the growing application of information technology in the transport sector.
- 3) The technology-based solution in the form of a digital platform was proposed and agreed.

- 4) The country representatives also pointed out the need for further consultation on technical issues, and policy approval of the GMS governments as a prerequisite for the GTIC development upon completion of the regional consultation at this stage, including:
- ✓ Transport-related information categories in need and prioritized information for the GTIC development by project phase;
 - ✓ Operation of the GTIC system in terms of (i) how the GTIC system can be linked with the countries' information at various levels, i.e. national and sub-national levels; and (ii) authorized information sharing mechanism between the national systems and the GTIC;
 - ✓ Information sources and data collection methods; and
 - ✓ Institutional arrangements, i.e. national ministries and agencies (e.g. ministry in charge and focal persons) as well as the national transport facilitation committees (NTFC); and coordination mechanisms proposed for the GTIC development.
- 5) The project on the GTIC was conceptualized and initially designed as follows:
- ✓ Target groups.
 - National Ministries: Ministry of Finance (Customs), Ministry of Transport (land transport) Ministry of Commerce / Ministry of Industry and Trade, Ministry of Agriculture (SPS standards and measures) Ministry of Information and Communications Technology, Ministry of Public Security, Ministry of Defence, and their departments at both national and sub-national levels
 - Transport support service providers Logistics and transport services providers, and truck operators and drivers, e.g. ICD owners, warehouse operators, cold chains, freight forwarders, way-side amenities providers (weigh bridge / tire pressure, etc.)
 - Training and research institutes
 - Freight Transport Association, Business Association, Industry Association
 - Businesses and Truck operators
 - ✓ Project scope: the GTIC covers the three main economic corridors (North-South, East-West, and Southern Economic Corridors) as denoted in the map of the GMS Economic Corridors.
 - ✓ Project timeframe: The project is designed to be implemented in three years with an initial schedule and arrangement as below:
 - Year 1 - Establishment of the GTIC: (i) Inception workshop and MOU signing to secure GMS Governments and stakeholders' participation; (ii) Formation of a GTIC committee as the focal point for the private sector / Government under the GMS National Transport Facilitation Committee (NTFC) in each country; (iii) Nomination of a Data Bank coordinator (DBC) in each country; (iv) Agreements on data categories and collection; (v) Data collection method and Data management.
 - Year 2 - Application, Training, and Promotion: (i) Test run of the GTIC system and error fixing, if any; (ii) Introduction to integration with GPS system in selected land transport companies, e.g. long haul trucks, (iii) Capacity building for potential users and stakeholders on data management, e.g. training for trucking companies and land transport services providers through Training of Trainers (ToT) approach, training for key staff of the

GMS countries; (iv) Mobile application development; (v) Launch of the GTIC mobile application; and (vi) database development.

- Year 3 - Operation, Maintenance, and Improvement: (i) Maintenance and integration with GMS logistics database and application system; (ii) information sharing among the GMS countries; (iii) Preparation for project exit strategy, ownership of the GTIC system for the GMS countries, and business model for the sustainable GTIC system.

I. INTRODUCTION

The Greater Mekong Sub-region (GMS) comprises six countries, namely Cambodia, Lao PDR, Myanmar, the People's Republic of China (Yunnan and Guangxi provinces), Thailand, and Viet Nam that share an increasingly interdependent network of transport, trade, and tourism.

The development of transport infrastructure and connectivity together with the implementation of the Cross-Border Transport Agreement (CBTA) aim to achieve the overarching goal of a seamless network of transport and transport services in the GMS, which is also in line with the Kunming Declaration (2005) for a stronger GMS partnership for common prosperity, while focusing on the transport sector¹. This vision of transport services operating seamlessly along the fully connected and integrated multimodal transport networks of the six GMS members cover (i) synergies in the GMS transport system; (ii) an open market for transport services; (iii) economic efficiency to reduce transport costs; and (iv) adoption and development of multi-modalism.

All GMS countries have widely recognized that transport is among the key catalysts of economic development and international competitiveness. The improvement of transport and communication facilities and information exchange is significant and highly suitable in the current context of expanded land routes and exchange of traffic rights at the key GMS border crossing points which allow a strong move towards an integrated regional market, with enhanced cooperation in improving the level and quality of transport and communications services and infrastructure².

The North-South Economic Corridor (NSEC) forms a North - South axis connecting Kunming, Yunnan province to Viet Nam, and Yunnan province to Bangkok, Thailand. It facilitates transport further south to Malaysia and Singapore. With the growing regional trade and the positioning of Kunming as a logistics hub between China and ASEAN, this economic corridor has great potential to form a major transport gateway between China and Thailand and the GMS. The East-West Economic Corridor (EWEC) is projected to be a land bridge between Viet Nam and the Andaman Sea running from Da Nang, Vietnam through Thailand to Myawaddy, Myanmar. On the other hand, the Southern Economic Corridor (SEC) connecting Bangkok to the east with Vietnam through Cambodia is emerging as an important linkage for industrial production hubs connecting SE Asia, Far East and South Asia. With regard to transport systems, it is evident that road transport is the dominant mode in all the GMS countries. Meanwhile sea transport is the transport mode most commonly used for intra-ASEAN trade. Contrarily, the regional railway network is still developing, and transport services have yet to meet market demand as a matter of fact. Also, for inland waterways transport is limited in terms of transport services and capacity

¹ Kunming Declaration, Asian Development Bank (ADB), 2005, <https://www.adb.org/news/kunming-declaration-stronger-gms-partnership-common-prosperity>

² Progress report on TTF Initiative in the GMS, ADB, 2013

with the fact that the Mekong River is not yet fully navigable. There is potential to expand its scope of freight transport but there still exist challenges such as security and safety.

In terms of trade and investment, businesses have established and developed along the corridors, but soft infrastructure is still inadequate. In this regard, enhancement and adjustments in regulations and development of information and communications technology will significantly contribute to the process of transforming the transport corridors into full economic corridors. In addition, the development of Special Economic Zones (SEZ), Cross-Border Economic Zones (CBEZ) in the border areas will promote the development of transport and trade logistics, and encourage further investment from businesses and the private sector that in return will benefit from competitive advantages in specific locations of each country and the sub-region as a whole.

Together with the transport connectivity and the growth of transport and logistics markets, given both opportunities and challenges ahead, the “GMS Transport Information Connectivity” is an initiative of the People’s Republic of China that aims to streamline the transport information system, enhance the transport information networks, and develop an integrated transport information platform with an effective information sharing mechanism among the GMS countries. Overall, this targets supporting the further development of the three main economic corridors under the GMS cooperation framework.

With this backdrop and support from the Government of PRC, Mekong Institute (MI) has successfully conducted a regional consultation workshop to assess the feasibility of “GMS Transport Information Connectivity System” with a focus on the key aspects of an integrated regional transport information network for the GMS. To this end, the national representatives from government ministries and / or departments in transport, information and communications technology sectors, and related stakeholders from the six GMS countries were the key participants of a three-day consultation. The workshop aimed to discuss and formulate the critical thinking, and policy and technical solutions with the facilitation of MI’s technical experts as an important preparation for the project on “GMS Transport Information Connectivity System”.

II. OBJECTIVES AND ANTICIPATED OUTPUTS

2.1. Objectives

The objectives of the regional consultation were to:

- Provide an overview of the need, importance and current status of transport connectivity in GMS emphasizing the significance of a transport information system in GMS.
- Share country experience in development and management of the transport information system to determine current transport and connectivity information status, sources, data needs and gaps, etc.
- Define a methodological approach for developing the GMS transport information connectivity system by identifying data types, availability and sources.

- Seek cooperation among the GMS countries in sharing information on transport connectivity for developing the GMS transport information connectivity system.

Aligning with the main objectives, the following were the sub-objectives of the workshop:

- Analyzing Greater Mekong Sub-region (GMS) Connectivity and the role of information and communications technology (ICT) in supporting the development of transport and logistics sector;
- Identifying national transport connectivity status and information needs.
- Assessment of the feasibility of the GMS Transport Information Connectivity (GTIC); and
- Obtaining inputs for design of the project on GMS Transport Information Connectivity (GTIC);

2.2. Expected Outputs

The expected outputs of the consultation workshop include:

- General agreement on the need and importance of the GMS transport information connectivity system in terms of information sharing among the GMS countries and trade and investment promotion in the region;
- Identified methodological approach and technological solutions for the GMS transport information connectivity (GTIC);
- Agreed concept for the design of the project on GMS transport information connectivity (GTIC);
- Established cooperation and network among the GMS to share information on the GMS transport information connectivity (GTIC) system development.

III. Consultation Process

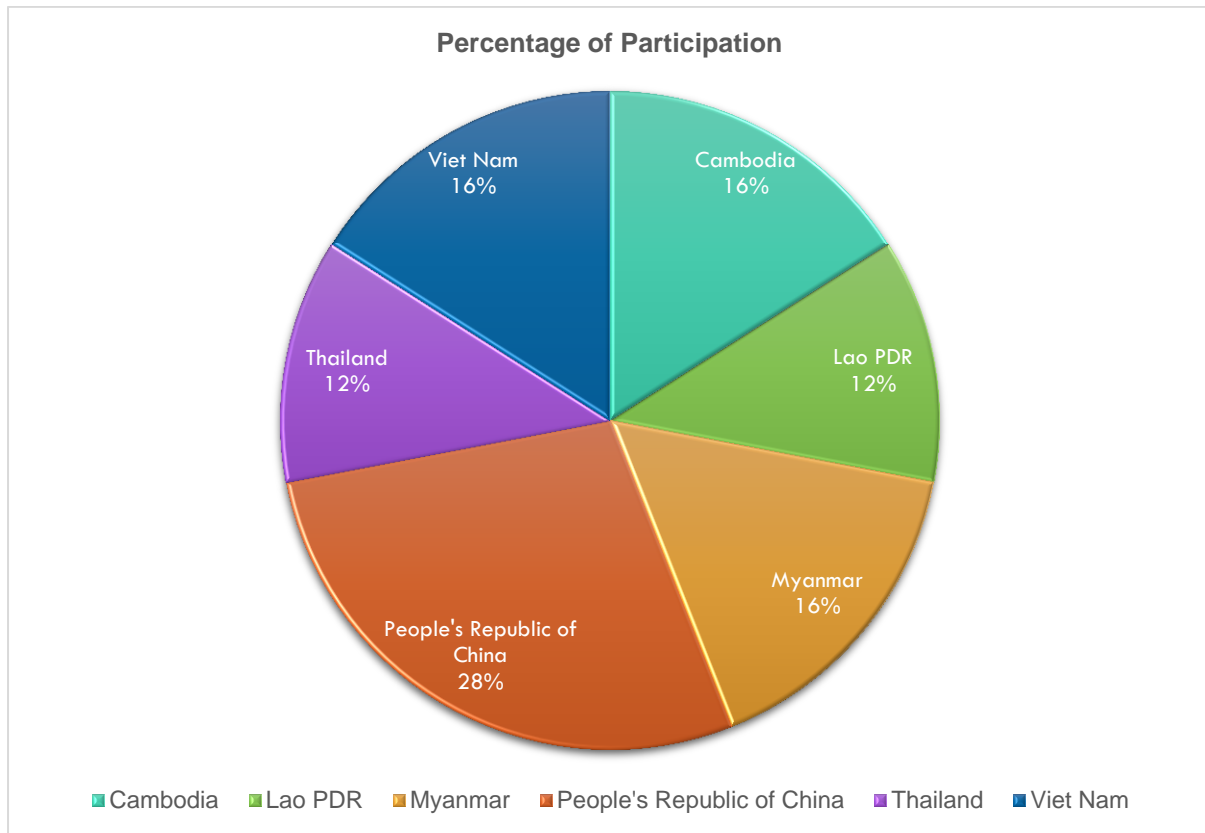
The regional consultation was successfully conducted in Khon Kaen, Thailand during April 19 -21, 2017, which was considered as the first step in the process of materializing the GMS Transport Information Connectivity (GTIC) initiative through assessment of its feasibility and initial design of the project for implementation in the GMS in the coming years. The consultation was conducted in collaboration with and support from the Government of PRC and the Yunnan province. It was chaired by the MI Executive Director and facilitated by three external technical experts and facilitators, and the team members of Trade and Investment Facilitation Department (TIF), MI. The participation varied from country to country with a total of 25 representatives overall from the government ministries and agencies at both national and sub-national levels, private organizations and companies, and research institutes who are of critical importance in the consultation.



Table 1. Countries and Delegates' organizations

Country	Participants' organizations
Cambodia	National Institute of Posts, Telecommunications and Information Communication Technology (NIPTICT), Ministry of Posts and Telecommunications of Cambodia (MPTC), General Department of Policy and Planning, Ministry of Public Works and Transport, RTC Co., LTD., Intra Co., Ltd., Cambodia Freight Forwarders Association (CAMFFA)
Lao PDR	Land Transport Division, Department of Transport, Ministry of Public Works and Transport (MoPWT), Information and Communication Technology (ICT) Division, Ministry of Public Works and Transport (MoPWT)
Myanmar	Ministry of Transport and Communications (MoTC), Myanmar Mercury Int'l Co., LTD., Myanmar International Freight Forwarder Association (MIFFA), Awards Group of Companies
People's Republic of China (PRC)	Department of Transport of Yunnan Province, Division of Information Networking, Road Transport Administration of Yunnan Province, Section of International Road Transport Cooperation, Division of International Cooperation, Yunnan Gold Peacock Transportation Group Co., Ltd., Yunnan Transportation Group Co., Ltd.
Thailand	Department of Land Transport, Ministry of Transport, LEO Global Logistics Co., Ltd., Logistics Research and Development Institute of the University of the Thai Chamber of Commerce (UTCC)
Viet Nam	Road Administration Department, Ministry of Transport, Database and Software Development Division, Information Technology Center Ministry of Transport, Vietnam Automobile Transport Association (VATA), Vietnam Trucking Association

Figure 1. The participation of the stakeholders by percentage



IV. Consultation on the GMS Transport Information Connectivity (GTIC)

4.1. Opening

Welcome Remarks



DR. WATCHARAS LEELAWATH

The consultation was started by the opening speech of Dr. Watcharas Leelawath, MI Executive Director, who warmly welcomed all participants, and extended his sincere thanks to the special presence of Mr. Li Hong, Permanent Representative of the People's Republic of China (PRC) to the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in Thailand, and to the Government of PRC for their continued support to MI as well as the GMS Transport Information Connectivity (GTIC) initiative. Dr. Watcharas Leelawath provided the participants with an overview of MI's vision and mission in human resource development, regional cooperation and integration through capacity building, research, development work, and policy consultation toward sustainable economic and social development and poverty alleviation in the GMS. He also raised the importance of the regional connectivity, especially information connectivity in the GMS, and expected that the GMS Transport Information Connectivity (GTIC) would receive the policy support of the six GMS countries, and that the country representatives from the Ministries and the private sector would productively discuss and assess the feasibility of the GMS Transport Information Connectivity (GTIC), and end up with a consensus on establishment and development of the GTIC system in the near future.

Opening Remarks



MR. LI HONG

During the opening remarks, Mr. Li Hong, Permanent Representative of the People's Republic of China (PRC) to ESCAP, Counselor, extended his warm thanks to MI for organizing such an important consultation and to the participants for their full attendance. He provided the meeting with an overview of the international and regional dynamics and the Chinese proposition in consideration of priorities in partnership development and cooperation strategies through (i) pursuit of peace and cooperation; (ii) equal treatment; (iii) openness and inclusiveness; and (iv) benefits for all in the context of weak recovery of the world economy and increasing uncertainties and destabilizing factors challenging economic development.

To that end, Mr. Li Hong highlighted the Lancang-Mekong Cooperation (LMC) mechanism, which is an important platform for the cooperation at sub-regional level and would finally promote the cooperation between the People’s Republic of China (PRC) and ASEAN countries. This is a highly pragmatic and efficient-oriented cooperation framework that drives regional cooperation and connectivity. In addition, Mr. Li Hong mentioned the PRC’s One Belt and One Road initiative that has received the support and consensus of over 100 countries and international organizations. Financially, the Asian Infrastructure Investment Bank (AIIB) has supported a number of projects with more than US\$ 4 billion since its establishment. The Silk Road Fund has also launched a number of investment projects. Chinese enterprises have invested more than US\$ 50 billion in the countries along the Belt and Road for promoting local economies and creating job opportunities, and delivering real benefits to the people of relevant countries.

Connectivity is an important and effective way to contribute to inclusive development. As technology brings breakthroughs in the transportation sector, infrastructure connectivity today plays a greater role in enabling the countries to promote trade and access the international markets. As a matter of fact, the international community has well recognized the importance of the connectivity and accumulated common understanding of connectivity. Indeed, the development agenda 2030 has put infrastructure connectivity as an important means and priority for realizing the Sustainable Development Goals (SDGs). As such, international and regional organization and agencies, e.g. the APEC, ASEAN, Shanghai Cooperation Organization (SCO)³, ESCAP, ADB, AIIB, and so on have either adopted connectivity road map, master plans, strategies or attached great resources to the connectivity development with an aim to strengthen regional connectivity, which is recognized as a strong driving force for regional economic growth.

Consultation and Program Overview



MR. MADHURJYA KUMAR DUTTA

Mr. Madhurjya Kumar Dutta, TIF Director, provided the workshop with the consultation process and program agenda, addressing the (i) main objectives and sub-objectives; (ii) expected outputs and outcomes; and (iii) detailed program agenda with the roles of all stakeholders. Mr. Dutta also mentioned the significance of the GMS Transport Information Connectivity (GTIC) initiative, especially in the dynamics of hardware and software connectivity in the sub-region (GMS), e.g. transport and trade facilitation, for enhancing regional cooperation and economic integration.

The GMS Transport Information Connectivity (GTIC) is one of the regional initiatives that requests the cooperation from the GMS governments and stakeholders who are, in

³ The SCO, an inter-governmental organization (IGO), founded in Shanghai in 2001, groups China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan, covering over 30 million square km and accounting for a quarter of the world’s population. It has Afghanistan, Belarus, India, Iran, Mongolia and Pakistan as observers, and Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey as dialogue partners.

principle, to share common interests and consensus on building the GTIC system in support of (i) the development of the national and regional transport sectors, (ii) a greater opportunity for the GMS countries to access transport information sources and share the transport information through a modern and uniform transport information platform.

Mekong Institute (MI) conducted the regional consultation for the mentioned-above purposes, and will proceed with a project proposal on the GMS Transport Information Connectivity for a three-year implementation period with the support of the Government of People’s Republic of China (PRC).

4.2. The GMS Connectivity and Development



MS. CHRISTINE SOUTIF

The GMS connectivity and development and the implementation status of the Cross-Border Transport Agreement (CBTA) were presented by the consultant, Ms. Christine Soutif, and Mr. Quan Anh Nguyen, TIF Program Specialist, aligning with the GMS strategic development framework:

Vision - a more integrated, prosperous, and harmonious sub-region;

- “3Cs” - Connectivity, Competitiveness, and Community



Source: Asian Development Bank (ADB)

For enhancing the “3Cs”, the GMS strategic framework 2002 - 2012 prioritized the following:

A. Connectivity

Increase through sustainable development of physical infrastructure and the transformation of transport corridors into transnational economic corridors.

B. Competitiveness

Improvement through efficient facilitation of cross-border movement of people and goods and the integration of markets, production processes, and value chains; and

C. Community

Enhancement of a greater sense of community through sharing social and environmental concerns and contribution to sustainable development.

The GMS Transport Cooperation for Connectivity

Transport is one of the earliest sectors under the GMS economic cooperation program

- The first Transport Sector Strategy (TSS) in 1990s aimed to:
 - Create cross-border access; priority to improvement over new construction
 - Facilitate cross-border transport and trade
- The second Transport Sector Strategy (TSS) for the period 2006 - 2015:
 - Towards seamless transport services on a fully connected and integrated GMS network;
 - Focused areas: (i) Completing the GMS transport corridors; (ii) Economic efficiency and reduced transport costs; (iii) Move toward an open market for transport services; and (iv) Multi-modalism.

Economic Corridor Approach



MR. QUAN NGUYEN

Complementary to the success in infrastructure development and connectivity through transport and other infrastructure linkages, the GMS economic corridor approach was developed with the following characteristics:

- Create links to major markets;
- Extend the benefits of improved transport linkages to remote locations and integrates them with more prosperous areas;
- Open up investment opportunities;
- Promote synergies through the clustering of projects;
- Provide demonstration effects; and
- Facilitates prioritization of regional projects and coordination of national projects with regional implications.

The new GMS strategic framework endorsed December 2011 targeted the GMS Program’s sustainability and effectiveness in the challenging new decades. To this end, the continued central role of the corridor development included:

- Broadening and deepening of economic corridors: Inter-linkages across sectors, multi-sector approach to ensure wide spread of benefits;
- Accelerating implementation of Transport and Trade facilitation (TTF) measures, logistics development and investments along the corridors; and

- Paying more attention to social and human resources, food and energy security, and climate change concerns.

Competitiveness and Community

Competitiveness and Community under the GMS cooperation framework are implemented by:

- Transport and Trade Facilitation: The GMS Cross-Border Transport Agreement (CBTA):
 - To facilitate efficient cross-border movement of goods, vehicles, and people in the sub-region. the GMS Cross-Border Transport Facilitation Agreement (CBTA) was fully ratified by all countries in 2016. It aimed to provide a framework for transport and trade facilitation efforts.
 - To implement nonphysical or “software” measures that can enhance connectivity and linkages among the member countries for increased cross-border trade and investment.
- Information and Communications Technology (ICT):
 - To improve telecommunications linkages, promote information and communications technology applications, and facilitate increased access to information and communications to lower transaction costs and enhance the competitiveness of the GMS
- Core Environment Program (CEP)
- Promoting GMS as a single tourist destination
- Core Agricultural Support Program
- Building capacity for development management; comprehensive HRD Strategy
- Multi-sectors and border economic zones:
 - Economic corridor development has catalyzed increasing interest in special economic zones, particularly border economic zones, which require coordination across multiple sectors; and
 - Maximizing the benefits of economic corridors will increasingly require multi-sector projects that involve public and private sector investments and that include both hardware and software interventions.



4.3. Information and Communications Technology (ICT) and Connectivity in the GMS

In parallel with the transport connectivity, ICT plays a major part of development in the GMS. In particular, ICT development through telecommunication network infrastructure has become a mechanism to facilitate economic development in the GMS countries. In this connection, a telecommunication network was proposed to link all member countries along border areas. The development looked into digitalization of the national networks, development of ITC facilities, creation of common standards and technology, and adjustment in regulations, policies and tariffs, and so on.

As a result, the GMS Information Superhighway Network (GMS ISN) has been launched since November 2004 and become the core program for GMS telecommunications development. With this cooperation, the GMS countries agreed on the objectives of (i) adaptation to the rapid development paces, (ii) enhancement of the information exchange among the GMS countries, and (iii) bridging up the digital gaps. The GMS ISN has been organized and implemented jointly by the six members with the aim to put into place a regional large-capacity backbone network connecting six countries through which the users can get access to basic telecommunication services, such as high quality voice, data and internet services as well as information services, including e-commerce, e-governance, and others.

Memorandum of Understanding (MoU) of July 2005 among the governments of GMS countries agreed in principle that the existing network resources should be used in building the GMS backbone network in order to reduce construction cost. Consequently, the GMS ISN was designed to be implemented in 4 phases:

- **Phase I:** Planning of the GMS ISN and establishment of common understanding and agreement;
- **Phase II:** Construction of the GMS ISN as the first step and planned ready-for-service (RFS) date for the GMS ISN by the end of 2008;
- **Phase III:** Construction of the GMS ISN as the second step and planned ready-for-service date for the GMS ISN by the end of 2010;
- **Phase IV:** Development of all types of services and application based on the constructed network facilities during the Phase II and Phase III.

To that end, the Memorandum of Understanding (MoU) on the Joint Cooperation in Further Accelerating the Construction of the Information Superhighway and Its Application in the GMS was signed in December 2011. The objective of the MoU was to promote ICT applications, and encourage economic growth in the GMS, especially in rural and remote areas.

4.4. ASEAN Connectivity

In a broader development context, namely the ASEAN, physical connectivity, which is complementary to the GMS connectivity and development, aimed to build a block for regional economic integration and the ASEAN Economic Community (AEC) blueprints. Indeed, seamlessly connected transport networks do not only represent the achievement of AEC goals, but also facilitate the process of economic development and integration through (i) a greater and stronger production base, (ii) market enlargement and competitiveness, (iii) trade and investment expansion, (iv) narrowing of development gaps and community building. Successful physical connectivity is an opportunity for both geographic and economic integration. With greater transport connectivity, ASEAN gets to reinforce its centrality in the emerging regional architecture.

In this connection, the ASEAN Transport Strategic Plan 2016 - 2025 reaffirmed to support the development of trade and tourism with an integrated regional land transport network within ASEAN and neighboring countries, while encouraging user friendly transport initiatives. It also set land transport specific goals and actions to enhance the use of Intelligent Transport System to increase cooperation and exchange of information on the implementation of cross-border transport operations in the region and to support the operationalization of the national transit transport coordinating committee (NTTCC). And it has planned to develop a database of ASEAN Land Transport Network, while enhancing logistics and supply chain capacity and skills development.

In addition to transport connectivity, the major software agreements to effect transport connectivity have been formulated, which are known as three ASEAN framework agreements on transport facilitation for (i) goods in transit (AFAFGIT), (ii) inter-state transit (AFAFIST), and (iii) multimodal transport (AFAMT). Also, there exist Agreements on liberalization of logistics, maritime, and air services markets.

4.5. National ICT Infrastructure and Connectivity Development Status in Cambodia, Lao PDR, Myanmar, People's Republic of China (PRC), Thailand, and Viet Nam

It is widely recognized that ICT plays a driving force in all aspects of development, especially in the information revolution era. As a matter of fact, ICT is considered as an engine of growth since it is one of the key economic sectors as well as an enabler to increase competitiveness of other sectors in the economy. In realization of the significance of ICT, all GMS countries, whose ICT sectors have developed at various paces and development levels, have strategies and action plans for ICT development as below:

A. Cambodia

Top five priority actions identified under the ICT Master Plan for 2020 of Cambodia for development included the development of (i) an e-government framework, (ii) strengthening of cyber-security, (iii) e-education, (iv) e-commerce, and (v) e-tourism.

The national objectives for the ICT Master Plan 2020 are:

- Empowering People to become top-tier country of ICT Human Resource Development in Southeast Asia, and 70% of Cambodian people are able to access internet by 2020;
- Ensuring Connectivity to improve service accessibility of telecom and broadcasting for all the people; to expand ICT infrastructure through government assistance and activating private investment and to set base environment for diverse ICT convergence such as voice & data, wire and wireless, and telecom and broadcasting;
- Enhancing Capabilities for Cambodian's own ICT ecosystem to be integrated into the global ICT ecosystem with a focus on (i) standardization as top priority, (ii) increase in the number of participation; (iii) enhancing ICT technological capacity through R&D; and (iv) promoting the national competitiveness; and
- Enriching e-Services with five priority actions, including development of an e-government framework, strengthening of cyber-security, e-education, e-commerce and e-tourism

B. Lao PDR

Lao National ICT development goals (2015) covered the following:

- Promoted infrastructure development, telecommunications and high-speed internet in order to modernize this sector for augmenting socio-economic development as well as be a link-point in the region and the world;
- Expanded telecommunication network and services to rural areas to cover 90% of all villages, and installed fiber-optic cables to the districts;

- A favorable environment for telecom operators / entrepreneurs in the ICT sectors, e.g. telecommunication and internet through the provision of necessary infrastructure, and advanced technology;
- Adequate policies and strategic plans on telecommunication, and Internet development; and
- Enhanced capacity of personnel in the ICT sectors to meet international standards.

Challenges

- Broadband policy is not yet in place, thus the regulation and development framework have still been pending;
- The geographical location is mostly hilly and mountainous, network expansion and infrastructure development are costly and rather difficult to be developed;
- Lack of human resources, especially in ICT sector;
- Lack of funding for capacity building, and necessary ICT facilities; and
- Establishment of regulatory framework compliance with Lao PDR's commitments to World Trade Organization (WTO) for the Telecommunication Sectors.

C. Myanmar

The national framework for economic and social reform (2013) with policy priorities until 2016 included the ICT development. This framework highlighted the following ICT-related reform objectives:

- 80% of penetration services as of 2015;
- Full sector liberalization by (i) opening the ICT market to both foreign and domestic investors on a nondiscriminatory basis, (ii) implementing a regulatory system that can ensure effective competition among suppliers, and (iii) regulating tariffs;
- Upgraded internet infrastructure to allow a comprehensive e-strategies in both public and private sectors; and
- Increased technical competence of the workforce through training and capacity development.

The Government has also updated its own ICT Master Plan that included (i) the development of an e-government national portal; (ii) a newly approved Telecommunications Law aimed to delineate the policy, regulatory, and operational functions of various stakeholders in the sector; and (iii) other related laws to support the development of the ICT sector that assisted the country in performing its commitments to ASEAN Economic Community (AEC) blueprints.

D. People's Republic of China (PRC)

In order to maximize the potential of ICT, China has developed long-term, mid-term, and industry-specific ICT policies.

- Long-term ICT development. The National Development Strategy (2006- 2020) sets forth the PRC's goals for the next 15 years. The key aspects are prioritized,

including (i) promoting information technology of the national economy; (ii) popularizing e-government; (iii) establishing an advanced internet culture; (iv) advancing information technology in specific sectors, such as education, health care, and public safety; (v) expanding information infrastructures (e.g. wireline broadband and 3G/4G wireless networks); (vi) exploiting information resources more efficiently; (vii) improving the global competitiveness of the national ICT industry; (viii) building national information security systems; and (ix) improving people's ability to use information technology.

- Mid-term ICT development. In each of the five-year plans for PRC's socioeconomic development from the past decades, ICT has an outstanding position. The latest, the 12nd Five-Year Plan, designated the ICT industry as one of China's seven strategic and emerging industries. Specific areas of focus include strengthening applications area sectors such as cloud computing and the Internet of Things (IoT), as well as established technology areas, such as integrated circuits (ICs), basic software, and broadband technology.
- Industry-specific ICT policies. The policies covered education, agriculture, software and information services, manufacturing, forest management, and land resources. The three most important government agencies in PRC with respect to ICT policies are:
 - The National Development and Reform Commission (NDRC) for planning and public investment;
 - The Ministry of Industry and Information Technology (MIIT) for the policy and operational actions in the ICT industry; and
 - The Ministry of Science and Technology (MOST) for research and development (R&D).

E. Thailand

Thailand has targeted the development strategy, which is known as the Smart Development, to achieve the goals of a knowledge-based and wisdom-based economy. To that end, every citizen will have an equal opportunity to take part in the development process, which will lead to balanced and sustainable growth. The Smart Thailand 2020 vision stated that "ICT is a key driving force leading Thai people towards knowledge and wisdom and leading society towards equality and sustainable economy". The main goals are:

- A universal broadband access to all people on an equitable basis. By 2015, 80 percent of the population will be able to access the broadband, which will increase to 95 percent by 2020.
- Sufficient high-quality human resources to shift the economy towards a service economy and a creative economy. At least 75 percent of the population will have information literacy. The proportion of ICT professionals will increase to at least 3 percent of the workforce;
- Increasingly significant role of ICT industries in the economy, e.g. at least 18 percent of GDP;
- Enhanced ICT readiness that will place Thailand in the top quartile of the Networked Readiness Ranking;

- Increased opportunities to generate revenue and improve quality of life (especially for disadvantaged groups) with more new internet-based employment.
- Improved awareness of the importance of ITC, and role of ICT in developing the economy and society in an environmentally-friendly and participatory manner.

F. Viet Nam

In Viet Nam, the ICT sector has well developed over the past few decades. It shows that ICT is one of the key sectors in its economy. The ICT policies and strategies cover all ICT-related industries, including:

National programs on IT applications for the period 2016 - 2020

- Development and improvement of infrastructure of national IT applications
- Development and improvement of information systems, database at the national level to create a foundation for developing e-government;
- Developing and improving IT applications in internal state agencies
- Development and improvement of IT applications serving citizens and businesses.

National Database Development established as of 2015

- National Database of population in charge by Ministry of Public Security (MoPS)
- National Database of Land in charge by Ministry of Natural Resources and Environment (MoNRE)
- National Database of Business Registration in charge by the Ministry of Planning and Investment
- National Database of Statistics on population in charge by Ministry of Planning and Investment (MPI)
- National Database of insurance in charge by the Vietnam Social Insurance in charge.

The national ICT development status has also been assessed and reflected through the ICT Development Index (IDI) as illustrated in Table 2.

Table 2. ICT Development Index ⁴ of ASEAN country and PRC

⁴ The ICT Development Index (IDI) is a composite index that combines 11 indicators into one benchmark measure. It is used to monitor and compare developments in information and communication technology (ICT) between countries and over time.

The main objectives of the IDI are to measure the: (i) level and evolution over time of ICT developments within countries and the experience of those countries relative to others; (ii) progress in ICT development in both developed and developing countries; (iii) digital divide, i.e. differences between countries in terms of their levels of ICT development; and (iv) development potential of ICTs and the extent to which countries can make use of them to enhance growth and development in the context of available capabilities and skills.

No	Country	2016		2015		2012		2010	
		Score	Rank	Score	Rank	Score	Rank	Score	Rank
1.	Singapore	7.95	19	8.08	19	7.65	15	7.62	11
2.	Brunei	5.33	74	5.53	53	58	5.06	4.85	57
3.	Malaysia	6.22	66	5.90	64	59	5.04	4.85	61
4.	Viet Nam	4.29	104	4.28	102	88	3.80	3.61	94
5.	Thailand	5.18	79	5.36	74	95	3.54	3.62	92
6.	Philippines	4.28	106	4.57	98	98	3.34	3.16	105
7.	Indonesia	3.86	115	3.94	108	97	3.43	3.11	109
8.	Lao PDR	2.45	144	2.45	138	123	2.10	1.92	135
9.	Cambodia	3.12	127	2.74	130	120	2.30	1.98	131
10.	Myanmar	2.54	153	2.27	142	134	1.74	1.58	150
11.	PRC	5.19	84	5.05	82	78	4.18	3.69	87

Source: ICT Development Index, available at www.itu.int for more information.

4.6. Needs and Significance of the GMS Transport Information and Connectivity and Assessment of the Feasibility of the GTIC



The assessment of the feasibility of the GMS Transport Information Connectivity through consultation with the representatives is based on the emerging need of:

- Transport information, especially land transport information;
- An effective information sharing mechanism among the stakeholders in the GMS countries to narrow down the information gaps;

- Establishment of a sub-regional transport information system in connectivity with the national transport-related database in each country

The development of the GMS Transport Information Connectivity is also aligned with the national ICT development status of each GMS country, and the growing application of information technology in the transport sector.

Indeed, information is increasingly considered as one of the most important factors in management, especially in operation and development of the market economy system. And present technological progress allows for almost continuous acquisition of information, its rapid transmission and reception with the fact that information and its impact can form a “nervous system” encircling individuals and organizations while connecting it with the environment, e.g. society, or economy.

The “nervous system” is most commonly referred to as the information system. The information system acquires any kind of information as well as generates information addressed at all processes that reflect the character of an information system.

In the transport sector, the transport information system will work on the transport processes. In order to improve transport processes, many technologies in the preparation and transmission of information have been created. To run the transport process smoothly, use of modern tools of information systems is always considered. This need leads to the creation of telecommunications and information technology (TIT). TIT also means telecommunications solutions, computers and information, and automatic control solutions that are used to meet the needs of supported physical systems. As such, TIT means devices and systems that collect data and transform them into information for the final users. The solutions can be divided into several criteria as below:

- Ability to scale the system;
 - Scope of information collected;⁵
 - Interactivity;⁶
 - Continuous transmission of information;
 - Hardware and software, which are operating systems, working only on providers’ platforms and those that can be installed on laptops or tablets;
 - The possibility and scope of the data export for further information systems;
 - The scope of processing the collected data;
 - Installation of central server / or access to data through the system via internet;
- and

Considering the need for transport information at both national and regional levels, and for establishment of the GMS Transport Information Connectivity, the representatives of

⁵ A closed system can only offer the information from its own sensors such as GPS position, while open systems allow for communication and information transfer systems trucks, and additional sensors

⁶ Information transmitted from the vehicle to the control panel or the other way, interactivity has advantages from the view of the vehicle features and better contact with the driver.

the six countries analyzed the current connectivity status quo in each country, which is summarized in Table 3.

Table 3. The GTIC and Need Analysis

Country	Need Analysis
Cambodia	<ul style="list-style-type: none"> ▪ Integrated GMS policy and regulations information ▪ National particulars in law and legislation (procedure and fees) ▪ Road and bridge information (weight, regulation, map, speed, etc.) ▪ Information on related authority/NTFC
Lao PDR	<ul style="list-style-type: none"> ▪ Integrated GMS policy and regulations information ▪ Transport information including traffic signs, road marking and traffic light comparison ▪ Access to national information including weight limitation and station location ▪ Cross-Border Information (Open/Closed) ▪ Cross-Border Procedures ▪ List of Verified Truck Operators ▪ Logistics and auxiliary services ▪ Procedure to set up branch ▪ Promoting/event/Forum/Meeting/Training
Myanmar	<ul style="list-style-type: none"> ▪ Integrated GMS policy and regulations information ▪ Access to national information, traffic regulations (procedure and fees) towards standard harmonization ▪ Easy access to updated information ▪ Cross-Border Procedures for more efficiency ▪ Trade volume, statistics potential
People's Republic of China (PRC)	<ul style="list-style-type: none"> ▪ Integrated GMS policies and regulations information (procedures and fees) ▪ Transport information including traffic signs, road marking and traffic light comparison ▪ Access to the Basic Geographic information (GPS & Beidou), including assistance, parking areas, logistic facilities ▪ List of Verified Truck Operators ▪ Logistics and auxiliary services ▪ Port information ▪ Passenger component with basic information
Thailand	<ul style="list-style-type: none"> ▪ Integrated GMS policy and regulations information ▪ Road Condition/Main Route/ Extension Route ▪ Access to national information including rest area, and repair services ▪ Cross-Border Information (Open/Closed) ▪ Cross-Border Procedures ▪ List of Verified Truck Operators & Directory ▪ Logistics and auxiliary services ▪ Track & Trace ▪ E-Documents ▪ Insurance

Country	Need Analysis
Viet Nam	<ul style="list-style-type: none"> ▪ Information sharing among the countries ▪ Access to same national information in different languages ▪ Information access and updates simplified ▪ Focal point to share procedures ▪ Truck operator management ▪ Optimize investment cost to develop Intelligent Transport System (ITS) ▪ Potential connectivity to the national single window system (NSWS)

It was also noted from the consultation process that Bilateral Agreements are predominantly preferred by all GMS countries to facilitate transport and trade, which highlight the need of transformation of transport corridor approach into a network approach. However, the multiplicity of bilateral agreements has increased the complexity of regulations for transport and trade facilitation (TTF) practitioners, especially truck operators, and shows the need for a unified transport information system as well. As such, more practical information, geographic locations, including restrictions and physical conditions of the infrastructure will help improve planning and increase visibility and transparency for the operators and support GMS competitiveness along the corridors.

For the case of Thailand, the country has intended to cover backhaul and incident reports using TDSC (Truck Data Service Center). In this connection, the participants trust that the development of a GMS Transport Information System can reduce empty runs in future and increase confidence of transport operators in case of disruptions. In addition, developing professionalisms and confidence will also support insurance scheme to be developed, so then trade and economic exchange will grow as a matter of fact.

At the same time, the representatives of Cambodia, Myanmar, and Lao PDR informed the consultation about the use GPS system (as compulsory) for commercial vehicles following PRC, Thailand, and Vietnam practices would enable vehicle operators to manage speed and driving time per drivers to improve road safety, which remain a priority for GMS and ASEAN.

As a result, the consultation session came up with specific information categories and requirements to the GTIC, which are summarized in Table 4.

Table 4. Information categories on Geography, Public services, Private services, and Laws

Information Category	Available (Y/N)	Format	Source	Share (Y/N)
A. Geographic Information				
Border points				
Topography				
Road name and size				

Information Category	Available (Y/N)	Format	Source	Share (Y/N)
Number of lanes				
Road Quality				
Road Conditions				
Bridges location and size				
Weight stations location				
Cities and ring roads locations				
Access restriction				
B. Public Services				
Parking area (stop) and size				
Police stations				
Hospitals				
Resting areas (larger) and size				
Port access				
Airport access				
Traffic conditions				
C. Private Services				
Garage, mechanics				
Petrol stations				
Restaurants				
Hotels				
Warehouses				
SEZs				
Truck terminals				
D. Legal information				
Traffic laws and penalties				
Traffic signs				
Transport regulations				
Vehicle size limitation				

Information Category	Available (Y/N)	Format	Source	Share (Y/N)
Changes in laws & regulations				
Dangerous goods regulations				
Goods restrictions				
Cross border procedures & documents check List				
Border operating hours				

Table 5. Information Category on Users

Information Category	Available (Y/N)	Format	Source	Share (Y/N)
A. Country Government Data Bank coordinator (DBC)				
Name				
Position				
Contact no/email				
B. Operators under Ministry of Transport (MoT) license information				
Company name				
Official address				
Representative				
Contact no/email				
Tax Registration no				
MoT license no.				
C. Vehicle information				
Vehicle registration certificate				
License plate, or registration no				
First date of registration				
Validity				
D. Particulars of the Vehicle or prime mover				
Type: Truck, bus, PAX car, etc.				

Brand/trademark				
Model/code				
Color				
Year of manufacture				
Number of axles				
Gross weight (trucks) / seats (buses)				
E. Engine of the vehicle or prime mover				
Brand (if different from body)				
Number of cylinders				
Capacity				
Horsepower				
Serial number				
F. Particulars of the trailer				
Chassis serial number				
Number of axles				
Empty weight				
Capacity				
G. Driver Information				
Full Name				
Birth date				
Passport no.				
Nationality				
Driving license no.				

4.7. Technology-Based Solutions for the GTIC System



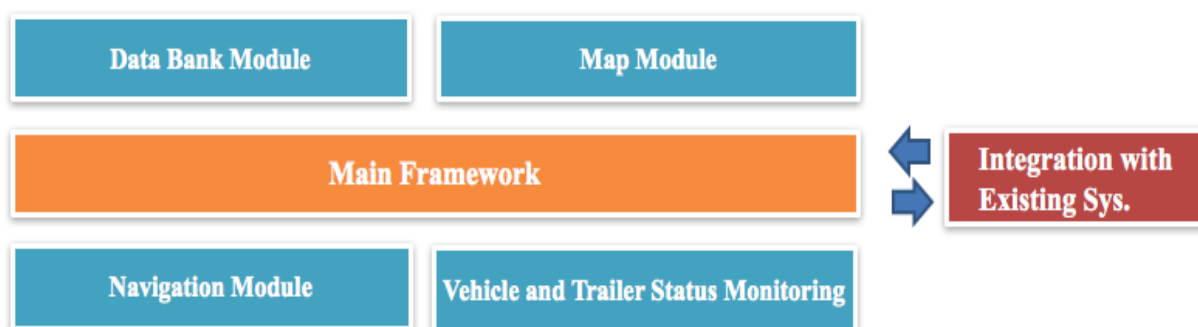
DR. MANZUL KUMAR HAZARIKA

Dr. Manzul Kumar Hazarika, Asian Institute of Technology (AIT), a technical expert, in review of the GMS connectivity status and the requirements for establishment of the GTIC system, presented the technology-based solutions to all participants for consultation.

For the mentioned purpose, Dr. Manzul described the designed system consisting of (i) main framework, (ii) databank module, (iii) map module, (iv) navigation module, and (v) vehicle and trailer status monitoring module, as summarized in Figure 2.

This is a multiple language transport information system with the national languages of the six GMS countries and English. The system, once established, aims to be entirely accessible to all GMS countries.

Figure 2. GTIC System



Main Framework

This main framework will be the core module and an Application Program Interface (API) will be used to communicate among the modules. This will also integrate with external systems and applications. The main framework of the GTIC will provide an administrative panel for group as well as user management. Each country will have their own user groups and they will have full control over their users in terms of credentials and accessibility levels.

The main framework will have an administrative panel to facilitate the following services:

- User Group Management (country-wise)
- User Management (User/ User Type)

Data Bank Module

The data bank module of the GTIC will be the heart of the system and there will be provisions for import and export of data. System administrators in the countries will be able to import and analyze external data, while they will be able to upload their own data to the system. A data sharing provision will also be made among users and the data bank will serve all the users who are registering to the system.

Table 6. Services facilitated by Data Bank Module

Data Bank Module	
Import Data	<ul style="list-style-type: none"> Import the data from other sources Analyze imported data to the system
Export Data	<ul style="list-style-type: none"> Upload local data Upload external data
Data Sharing	<ul style="list-style-type: none"> Facilitate share spatial and non-spatial data among users



Data bank module will store data from all countries in Greater Mekong Sub-region. Each country will be able to upload their GIS data (shapefile, KML file and geojson) as well as non-GIS data.

Table 7. GIS Data

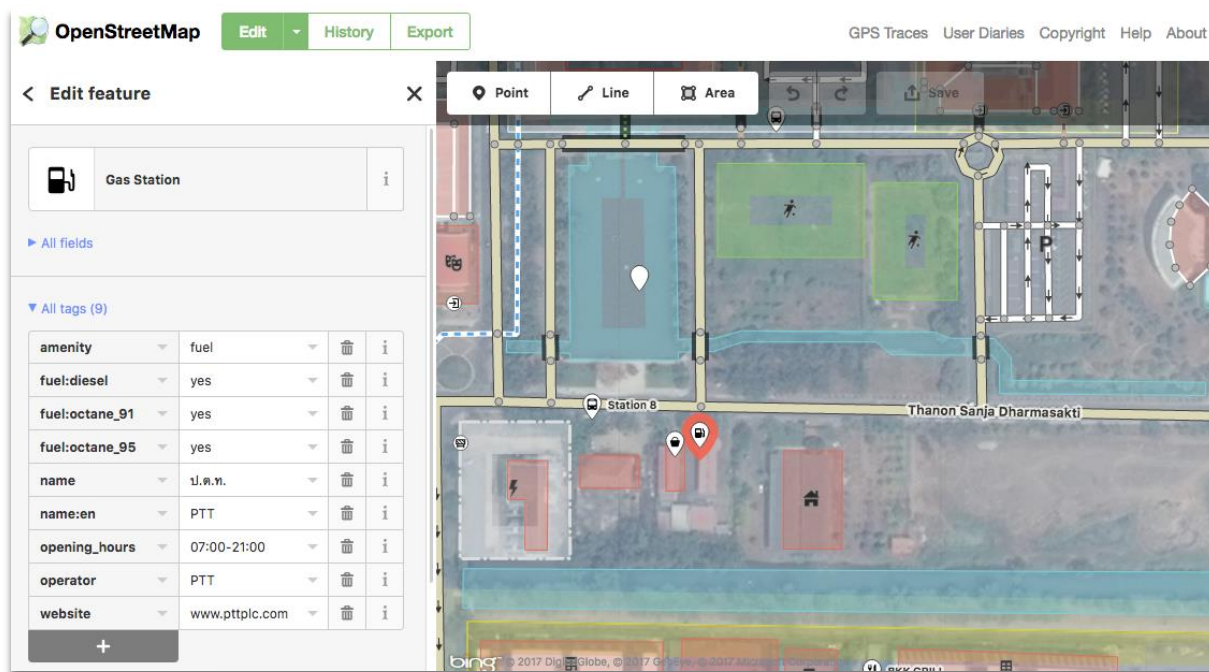
GIS Data	
General information	<ul style="list-style-type: none"> ▪ Administrative boundaries ▪ Topography ▪ Cities locations and bypasses/ring roads
Road Information	<ul style="list-style-type: none"> ▪ Road name/no. and bridges ▪ Access restrictions ▪ Road size ▪ No. of lanes ▪ Road quality ▪ Road condition ▪ Traffic condition
Information on public facilities and services	<ul style="list-style-type: none"> ▪ Parking/Rest areas ▪ Police stations ▪ Hospitals ▪ Truck terminals ▪ Special Economic Zones (SEZs) ▪ Ports and their accessibilities ▪ Airports and their accessibilities
Information on private facilities and services	<ul style="list-style-type: none"> ▪ Gas stations ▪ Restaurants ▪ Hotels ▪ Warehouses ▪ Garages/Repairing Facilities
Transport and traffic rules and regulations	<ul style="list-style-type: none"> ▪ Traffic rules and penalties for violations ▪ Limitations on vehicle size and allowable weights ▪ Regulations on dangerous goods ▪ Cross border procedures and documents check-list ▪ Border operating hours

Map Module

The map module will facilitate the viewing of the geographical data stored in the data bank. Designated users such as truck drivers who have accessibility to the system can add and update the data. The Open Street Map (OSM) will be the core engine of this system, which uses crowd sourcing to update the maps.

With the help of the map module, each country shall be able to view the following:

- General information and transport/traffic rules and regulations
- Road Information
- Information on public facilities and services
- Information on private facilities and services



VIEWING INFORMATION ON FACILITIES AND SERVICES (GAS STATION)

The map module will show general information about a country. It will also show road information such as road name/no. and bridges, access restrictions, road size, no. of lanes, road quality, road condition, traffic condition etc. in a particular country. Information on public and private facilities and services will be also displayed so that driver and transport operators can take a note of the conditions while making their plans. Country specific transport and traffic rules and regulations are very important smooth operations and this module will provide an interface to view all such information.

Navigation Module

The navigation module will use data from the map module for the Point of Interests (POIs) such as gas stations, police stations, parking areas etc. This module will be implemented in mobile phones as an application. The main feature of this module is to facilitate the drivers with a reliable navigation system based on information available from the map module as well as the country specific transport and traffic rules and regulations. This module will, however, help in updating and enriching data and information in the map module as drivers can populate and update the maps in the map module directly from the ground using the mobile application while traveling.

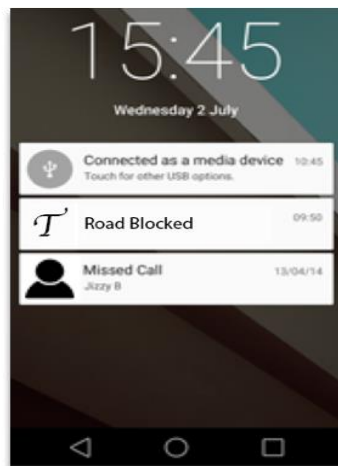
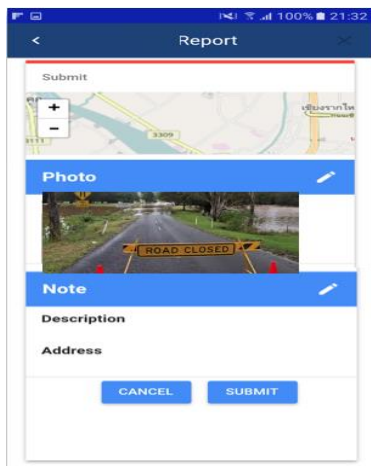
Table 8. Services facilitated by the Navigation Module:

Navigation Module	
Vehicle and Driver Information	<ul style="list-style-type: none"> Information on vehicle registration Information on trailer registration, if any Bio-data of driver and information about the licenses
Navigation Information	<ul style="list-style-type: none"> On-line/off-line navigation Designated routes in a specific country

Navigation Module

- Travel distance
- Estimated travel time
- Information on the point of interests (POIs)
- Add new point of interests
- Incident/Emergency situation reporting

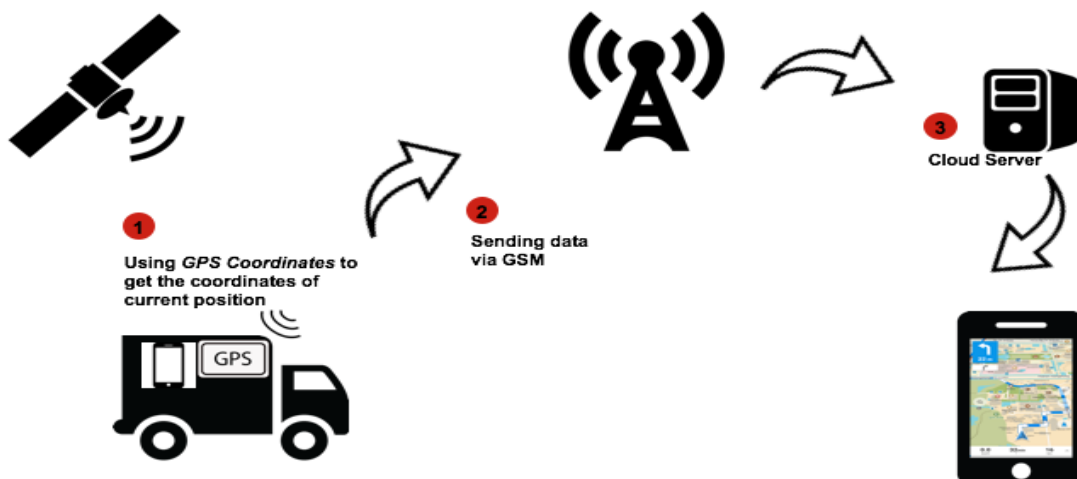
Drivers can use the mobile phone application for both on-line and off-line navigations. Drivers can input their destination into the application and the application will estimate the travel distance and time through the designated routes in a country. This function will be similar to Google navigation system, however, this system will be based on open source maps as well as other available maps with the countries. While traveling, drivers can also add new point of interests into the maps through the mobile phone application. This feature will improve the quality and reliability of the background maps available from the map module.



REPORTING AN ACCIDENT OR AN EMERGENCY SITUATION

Drivers can report an incident or an emergency situation in real-time using the application in order to receiving immediate help. Once a report arrives at the server, concerned authorities of the country will be notified where the incident took place. The report will be tagged with the location so that appropriate assistance can be directed immediately to the spot. Similarly, another notification will be issued to appropriate authorities to the country from where the vehicle was originated.

Vehicle and Trailer Status Monitoring Module

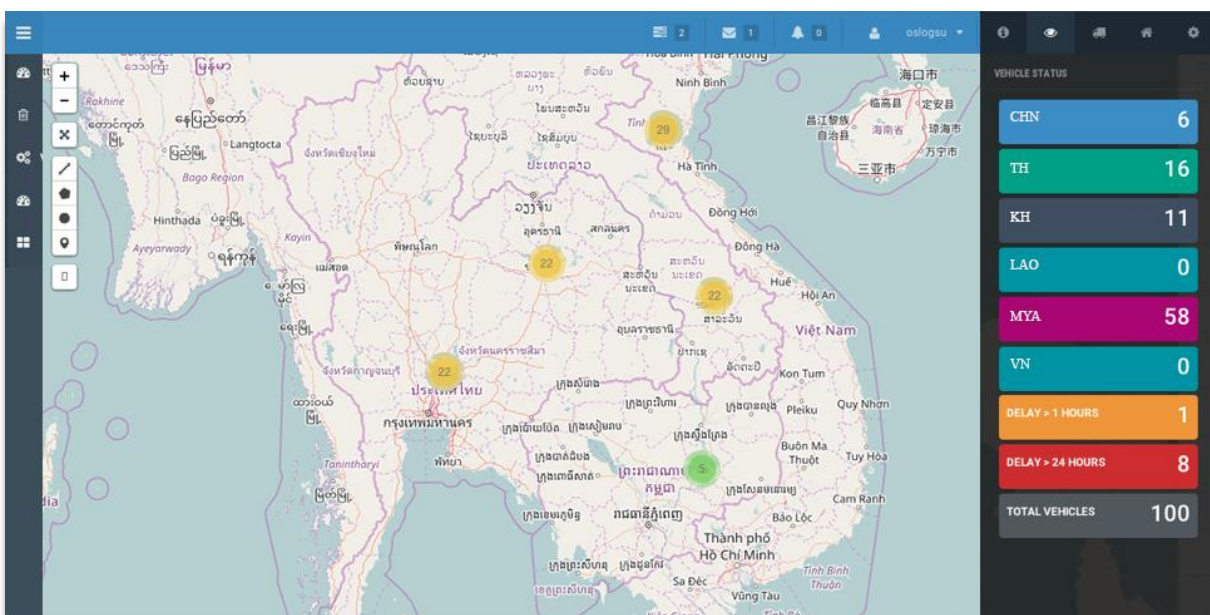


Monitoring the vehicles and trailers will be an essential component of the GTIC. For enabling the monitoring, each vehicle and trailer should be equipped with GPS and it should be connected to the internet through mobile network as shown below.

The navigation module will facilitate the following services:

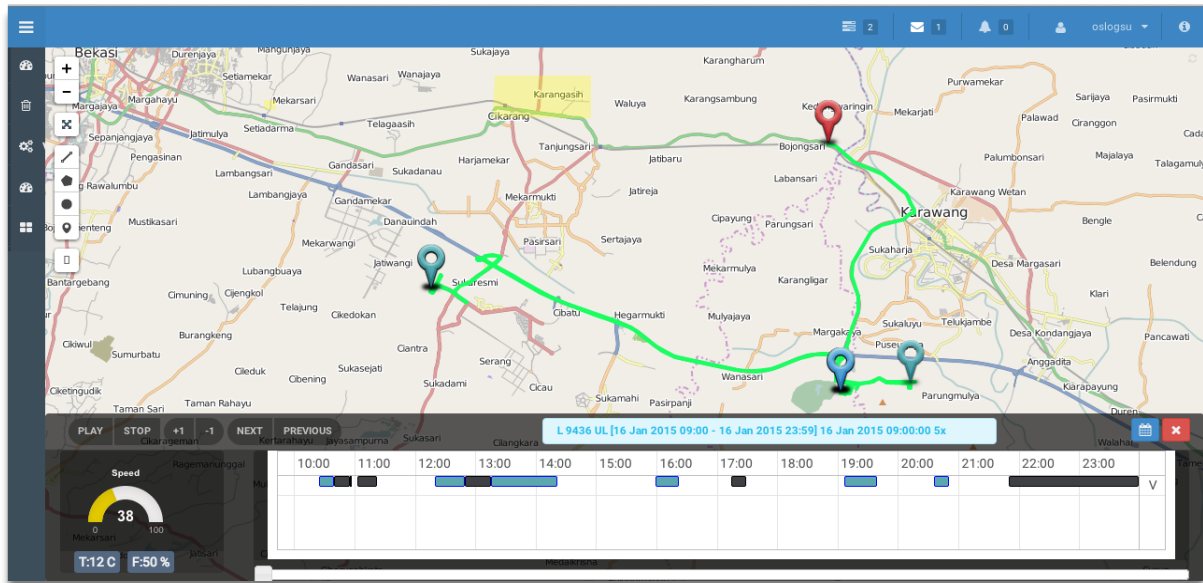
- Vehicle/Trailer Status Monitoring Module
 - ✓ Current location
 - ✓ Vehicle/Trailer Trip History
 - ✓ Over speeding segments
- Alert/Notification
 - ✓ Receiving emergency information
 - ✓ Upcoming notification the vehicles will reach the border
 - ✓ Emergency notification

The global positioning system (GPS) mounted in the vehicles and trailers would provide the location which will be further transmitted to the server through the mobile network. Locations of all the vehicles can be viewed in a map as illustrated herewith. Monitoring of individual vehicle will be also possible through the system, for example, the amount of time a vehicle or a trailer spent in a resting area.

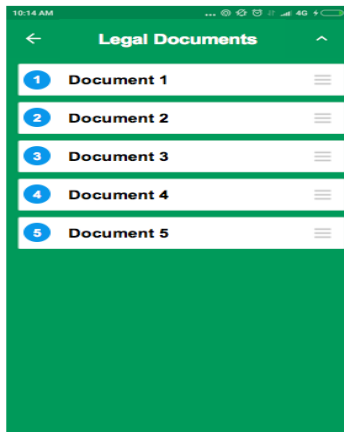


LOCATIONS OF VEHICLES AND TRAILERS IN THE MAP

The trip history of a vehicle or a trailer will be also monitored through the system. The system can capture the over speeding of vehicles showing the over speeding segments.



CAPTURING THE TRIP HISTORY



DOCUMENT CHECK LIST

In addition, important information such as documents required for border crossing will be available to the drivers through the mobile phone application in the form of a check-list. However, such information will be stored in the server and necessary updating can be done by the countries as required. Designated operators can also access it through web browsers.

At the consultation, the delegates agreed on the proposed technology-based solution in the form of a digital platform which aimed to serve the transport information connectivity for the six GMS countries. In this connection, the country delegates pointed out the need of further consultation on technical issues, and policy approval of the GMS governments as prerequisite for the GTIC development upon completion of the regional consultation at this stage, including:

- Transport-related information categories and prioritized information for the GTIC development by project phase;
- Operation of the GTIC system in terms of (i) how the GTIC system can be linked with the countries’ information at various levels, i.e. national and sub-national

levels; and (ii) authorized information sharing mechanism between the national systems and the GTIC;

- Information sources and data collection methods; and
- Institutional arrangements, i.e. national ministries and agencies (e.g. ministry in charge and focal persons) as well as national transport facilitation committees (NTFC); and coordination mechanisms proposed for the GTIC development.



4.8. Project Design

At this session, the representatives of the six GMS countries agreed on the establishment and development of the GTIC in the form of a development project that will be proposed and implemented by Mekong Institute (MI) in collaboration with all participating countries.

The project was initially conceptualized and comprised of three parts:

- **Establishment of GTIC platform**
 - ✓ Design of the user-friendly GTIC system.
 - ✓ Inception workshop and MOU signing to secure GMS Governments and stakeholders' participation.
 - ✓ Formation of a GTIC committee as the focal point for the private sector / Government under the GMS National Transport Facilitation Committee (NTFC) in each country.
 - ✓ Nomination of a Data Bank coordinator (DBC) in each country
 - ✓ Data collection methods and information sharing
 - ✓ Data management by MI

- **Application, training and promotion**
 - ✓ Launch of the GTIC system in a digital platform
 - ✓ Capacity building for potential users and stakeholders on data management
 - ✓ Mobile application development
 - ✓ Launch of the GTIC mobile application
- **Operation, maintenance, and improvements**
 - ✓ Test run of the GTIC system and error fixing, if any
 - ✓ Adjustment of the system and system security confirmation
 - ✓ Database development and information sharing mechanism
 - ✓ Preparation for project exit strategy, ownership of the GTIC system for the GMS countries, and business model for the sustainable GTIC system
- **Target groups.**
 - National Ministries: Ministry of Finance (Customs), Ministry of Transport (land transport) Ministry of Commerce / Ministry of Industry and Trade, Ministry of Agriculture (SPS standards and measures) Ministry of Information and Communications Technology, Ministry of Public Security, Ministry of Defence, and their departments at both national and sub-national levels
 - Transport support service providers Logistics and transport services providers, and truck operators and drivers, e.g. ICD owners, warehouse operators, cold chains, freight forwarders, way-side amenities providers (weigh bridge / tire pressure, etc.)
 - Training and research institutes
 - Freight Transport Association, Business Association, Industry Association
 - Businesses and Truck operators
- **Project scope:** the GTIC covers the three main economic corridors (North-South, East-West, and Southern Economic Corridors) as denoted in the map of the GMS Economic Corridors.

Figure 3. Map of the GMS Economic Corridors



Source: Asian Development Bank (ADB)

- **Project timeframe:** The project is designed to be implemented in three years with an initial schedule and arrangement as below:
 - **Year 1 - Establishment of the GTIC:** (i) Inception workshop and MOU signing to secure GMS Governments and stakeholders' participation; (ii) Formation of a GTIC committee as the focal point for the private sector / Government under the GMS National Transport Facilitation Committee (NTFC) in each country; (iii) Nomination of a Data Bank coordinator (DBC) in each country; (iv) Agreements on data categories and collection; (v) Data collection method and Data management.
 - **Year 2 - Application, Training, and Promotion:** (i) Test run of the GTIC system and error fixing, if any; (ii) Introduction to integration with GPS system in selected land transport companies, e.g. long haul trucks, (iii) Capacity building for potential users and stakeholders on data management, e.g. training for trucking companies and land transport services providers through Training of Trainers (ToT) approach, training for key staff of the GMS countries; (iv) Mobile application development; (v) Launch of the GTIC mobile application; and (vi) database development.
 - **Year 3 - Operation, Maintenance, and Improvement:** (i) Maintenance and integration with GMS logistics database and application system; (ii) information sharing among the GMS countries; (iii) Preparation for project exit strategy, ownership of the GTIC system for the GMS countries, and business model for the sustainable GTIC system

To prepare for project proposal development, the consultation agreed on the list of activities to be followed-up as summarized in Table 9:

Table 9. Follow-on activities for GTIC project design and development

Categories	Activities to be implemented
Establishment of GTIC Platform	<ul style="list-style-type: none"> ▪ Design draft user friendly GTIC system platform ▪ Inception workshop and sign MOU to secure GMS stakeholders participation ▪ Each country to form a committee focal point for PS / Government under NTFC ▪ Each country to nominate a Data Bank coordinator (DBC) ▪ Online data collection and data cleaning by DBC ▪ Data sharing to central system under MI control
Application, Training, and Promotion	<ul style="list-style-type: none"> ▪ Launch of GTIC web base ▪ Capacity building to potential users on data management ▪ Mobile application development ▪ Launch of GTIC mobile apps
Operation, Maintenance, and Improvement	<ul style="list-style-type: none"> ▪ Trial run of the system and fix errors, if any ▪ Adjustment of the system and confirm system security

- Exit strategy and ownership confirmation, business model development
- Establish data sharing and security mechanism among GMS member after completion of the project

V. The Way Forward and Consultation Closing



Mr. Madhurjya Kumar Dutta, at his closing remarks, informed the regional consultation that the GMS economic cooperation program has been implemented for more than two decades (1992 - 2017), and made significant progress with successful results in regional cooperation and economic integration through transport connectivity and transforming the transport corridors into economic corridors. Indeed, the success in transport infrastructure connectivity has built a solid ground for promoting and developing other types of connectivity, e.g.

software connectivity through transport and trade facilitation as well as opened broader opportunities for cooperation and synergies among the governments and development partners in strengthen the GMS connectivity in an effective and pragmatic manner. Aligning with the development of information technology, the GTIC initiative could be seen as a breakthrough in the transport sector in particular and the regional connectivity as a whole.

The regional consultation successfully achieved its objectives with full support of all delegates. Mr. Dutta reiterated the next steps for the GTIC development based on this regional consultation results - (i) the post consultation activities would be continued through the cooperation between MI and the delegates to ensure that the consultation results will be reviewed and approved at a higher making-decision levels; and (ii) MI would propose the Government of PRC a three-year project to establish and implement the GTIC system in collaboration with the six GMS countries in the next few years.

Closing the event, Mr. Dutta once again extended his warmest thanks to all delegates and consultants and facilitators for time and efforts contributed the consultation during April 19-21, 2017.

VI. Annexes

6.1. Program Agenda

Day 1. Wednesday, April 19, 2017

Time	Activities and key topics	Speaker
8:00 - 8:30	Registration	
8:30 - 8:40	Welcome Remarks	Dr. Watcharas Leelawath Executive Director, MI
8:40 - 8:50	Opening Remarks	Mr. Li Hong Permanent Representative of P.R. China to UNESCAP Mission
8:50 - 9:10	Workshop Overview <ul style="list-style-type: none"> Workshop Objectives Workshop agenda 	Mr. Madhuriya Kumar Dutta Director of Trade and Investment Facilitation Department (TIF), MI
9:10 - 9:30	Group photo and Coffee / tea break	
9:30 - 10:30	Session 1: Introduction to Greater Mekong Sub-region (GMS) Connectivity <i>Technical input</i> <ul style="list-style-type: none"> GMS Economic Cooperation Program GMS Economic Corridor Development for Connectivity 	Ms. Christine Soutif MI Technical Consultant
10:30 - 12:00	Session 2: National Connectivity Development Status of the Six GMS countries <i>Information Sharing</i> <ul style="list-style-type: none"> Infrastructure connectivity in terms of Transport and Telecommunication Existing Information connectivity for multimodal transport Advantage and challenges of connectivity 	Representatives of <ul style="list-style-type: none"> Cambodia, P.R.China Lao PDR Myanmar Thailand Vietnam <i>(10 min per presentation plus 5 min for Q&A)</i>
12:00 - 13:30	Lunch @ MI Canteen, 1 st floor, MI Annex	
13:30 - 15:00	Session 3: GMS Cross Border Trade Agreement (CBTA) Implementation Progress <ul style="list-style-type: none"> Overview <i>Group Discussion:</i> Policy readiness for connectivity - progress, challenges and plan of actions for implementing CBTA in each country 	Mr. Nguyen Quan Anh, Program Specialist, TIF, MI Group discussion: Group 1: CN, LA, MM Group 2: CN, TH, VN Group 3: VN, CA, LA Group 4: MM, TH, CA
15:00 - 15:30	Coffee break	

15:30 - 17:00	Session 4. Assessment of the feasibility of the GMS Transport Information Connectivity (GTIC) <u>Group Discussion</u> to identify needs and to form consensus on the importance of GTIC <ul style="list-style-type: none"> Needs for a GMS Transport Information Connectivity (GTIS) system Importance/ usefulness of a GTIS system Challenges Potential Beneficiaries of this project 	Facilitated by Ms. Christine Soutif MI Technical Consultant Group discussion by country
18:00 - 20:00	Welcome Dinner	

Day 2. Thursday, April 20, 2017


Time	Activities and key topics	Speaker
8:30 - 9:30	Presentation of group discussions Day 1 by each country	Representatives of Cambodia, China, Lao PDR, Myanmar, Thailand and Vietnam (10 min each)
9:30 - 10:00	Session 4. Assessment of the feasibility of the GMS Transport Information Connectivity (GTIC) <u>Group Discussion</u> to define the scope of GTIC <ul style="list-style-type: none"> Connectivity by transport modes Geographical coverage - major GMS economic corridor? 	Facilitated by Ms. Christine Soutif MI Technical Consultant Group discussion: Group 1: CN, LA, MM Group 2: CN, TH, VN Group 3: VN, CA, LA Group 4: MM, TH, CA
10:00 - 10:30	Coffee break	
10:30 - 12:00	Session 5. Technology-based solutions for GTIC system and clarifications for data requirements <u>Technical input</u> <ul style="list-style-type: none"> Technology-based solutions for GTIC system 	Dr. Manzul Kumar Hazarika Director (Project Operations) of Geoinformatics Center, Asian Institute of Technology (AIT), Thailand
12:00 - 13:30	Lunch	
13:30 - 14:30	Session 5. (Continued) <u>Technical input</u> <ul style="list-style-type: none"> Specific data requirements for technology based solutions for GTIC system 	Dr. Manzul Kumar Hazarika AIT, Thailand
14:30 - 15:30	Session 5. (Continued) <u>Group Discussion and coffee break:</u> <ul style="list-style-type: none"> Technical solutions for the GTIC system (in what format) National legal framework for data sharing to develop the GTIC system Identify availability and sources of data for GTIC system User interface of the GTIC system 	Facilitated by MI technical consultant and expert from AIT, Thailand In 2 to 4 groups by expertise (and not by country to encourage networking and cross country discussions)
15:30 - 16:30	<ul style="list-style-type: none"> Presentation of group discussions Session 4 & Session 5 	MI technical consultant and expert from AIT, Thailand

16:30 - 17:00	<ul style="list-style-type: none"> Guideline to prepare group discussion on Day 3 	Ms. Christine Soutif MI Technical Consultant
18:00 - 19:30	Free time	

Day 3. Friday, April 21, 2017

Time	Activities and key topics	Speaker
8:30 - 9:00	Summary of discussion results and consensus on Session 5 (Day 2)	TIF, MI
9:00 - 10:30	Session 6. Inputs for Project Design on the GMS Transport Information Connectivity (GTIC) Group Discussion and presentation <ul style="list-style-type: none"> Project components and activities list Short-term, medium-term and long-term objectives, outputs and outcomes of the project and each project component; Target beneficiaries and amount Stakeholders/ development partner's composition, roles and coordination mechanism, and etc. Project approach, tentative cost, duration to implement the project 	MI technical consultants in consultation with country representatives In group by country
10:30 - 10:50	Coffee break	
10:50 - 11:30	Wrap up workshop results for project proposal formulation	Ms. Christine Soutif MI Technical Consultant
11:30 - 11:45	The way forward	Mr. Madhuriya Kumar Dutta Director of Trade and Investment Facilitation Department (TIF), MI
11:45 - 12:00	Closing remarks	Dr. Watcharas Leelawath Executive Director of MI
12:00 - 13:00	Farewell Lunch	
13:00 -	Depart from MI to airport	

6.2. Delegates

#	Name and Position	Organization and Address	Contact
CAMBODIA 			
1.	Mr. Ke Sopheak Director of Information Management	General Department of Policy and Planning, Ministry of Public Works and Transport Corner Norodom Blvd/Street 106, Phnom Penh, Cambodia	Tel: Mobile: +855 15776988 E-mail: kesopheak@yahoo.com; kesopheak@mpwt.gov.kh Web:
2.	Ms. Maria Yang Official	National Institute of Posts, Telecommunications and Information Communication Technology (NIPTICT), Ministry of Posts and Telecommunications of Cambodia (MPTC) Phnom Penh, Cambodia	Tel: Mobile: +855 17882838 Email: maria.yang@nptict.edu.kh Web:
3.	Mr. Kuch Sithoudom General Manager	RTC Co., LTD (Land Transportation) #701, St 1966, Phnom Penh Thmey, Sen Sok, Phnom Penh, Cambodia 12101	Tel: +855) 23 231 752 Mobile: +855 015 34 8888 / 017 791 777 Email: victor.kuch@rtctrans.com Web:
4.	Mrs. Oranooch Pakarat Managing Director	Intra Co., Ltd. Member of Cambodia Freight Forwarders Association (CAMFFA)	Tel: +855 23-427152; 23-211811 Mobile: +6618392452 Email: manager@intra-mekong.com Web: http://www.intra-mekong.com
P.R.CHINA 			
5.	Mr. Zhou Youbin Deputy Director General	Department of Transport of Yunnan Province No. 1 West Ring Road, Kunming, P. R. China	Tel: +86 87 65305700 Mobile: Email: Web:
6.	Mr. Ma Xiaojun Director	Division of Information Networking Department of Transport of Yunnan Province No. 1 West Ring Road, Kunming, P. R. China	Tel: +86 871 6530 5756 Mobile: Email: Web:
7.	Mr. Wang Xuesong Deputy Director	Road Transport Administration of Yunnan Province	Tel: +86 871 6530 3865 Mobile: Email: Web:
8.	Ms. Zhao Huiru Section Chief	Section of International Road Transport Cooperation, Road Transport Administration of Yunnan Province	Tel: +86 871 6530 5775 Mobile: Email: Web:
9.	Mr. Dou Chaowei Officer	Division of International Cooperation Department of Transport of Yunnan Province No. 1 West Ring Road, Kunming,	Tel: +86 871 65305642 Mobile: Email: 47986751@qq.com ; chaoweidou@163.com ; Web:

P. R. China		
10. Mr. Luo Jiahong Deputy General Manager	Yunnan Gold Peacock Transportation Group Co., LTD.	Tel: Mobile: Email: Web:
11. Mr. Yao Wei Assistant for General Manager	Yunnan Transportation Group Co., LTD.	Tel: + 86 138 8882 5622 Mobile: Email: Web:
LAO PDR		
12. Mr. Sonephet Somekhit Technical Official	Land Transport Division, Department of Transport Ministry of Public Works and Transport Lane Xang Avenue, Vientiane P.O Box 10618, Lao PDR	Tel: Mobile: +856-20-23728555, +856 2058993319 Fax: +856-21-415563 E-mail: donesomekhit@gmail.com Web:
13. Ms. Adisone Silavong Technical Official	Land Transport Division, Department of Transport, Ministry of Public Works and Transport Lane Xang Avenue, Vientiane P.O Box 10618, Lao PDR	Tel: Mobile: Email: adisone.silavong@gmail.com Web:
14. Mr. Sengchanh Homsylahack Director	Information and Communication Technology (ICT) Division, Ministry of Public Works and Transport Lane Xang Avenue, Vientiane P.O Box 10618, Lao PDR	Tel: Mobile: E-mail: homsylahack.sc@mpwt.gov.la Web:
MYANMAR		
15. Ms. Khin Ma Ma Sein Win Assistant Director	Ministry of Transport and Communications Nay Pyi Taw, Myanmar	Tel: +95 67 405426 Mobile: +95 9 43112593 Email: motc.landtransport@gmail.com Web:
16. Mr. Win Min Aung Assistant Director	Posts and Telecommunications Department, Ministry of Transport and Communications	Nay Pyi Taw, Myanmar Mobile: +95-9 448000098 E-mail: winminaung01@gmail.com Web:
17. Ms. Hla Hla Yee Managing Director	Myanmar Mercury Int'l Co., LTD Myanmar International Freight Fowarder Association (MIFFA) RM #808, La pyaytWun Plaza, Yongon, Myanmar	Tel: +95-13-708-32 / 95-12-300- 236 Mobile: +95-95-008-736 E-mail: honeytha373@gmail.com Website: www.miffa.org

18.	Ms.Ohn Mar Maw Executive Director	Awards Group of Companies Room (302), 2nd Floor, No 20/AC, The Dawn Condo, 2th Street, West Shwegonedaing Bahan Township, Yangon, Myanmar	Tel/Fax : +959 25861 1110, +959 25292 8526 Mobile : + 959 501 3709, +959 7953 40564 E-mail : ohnmarmaw@awardscorporation.com ; ohnmarmaw2008@gmail.com Website : www.awardscorporation.com
THAILAND			
19.	Ms. Piyawan Thapangan Chief of Freight Transport Development and Promotion Group	Department of Land Transport Ministry of Transport 1032 Phahonyothin Road, Chatuchak, Bangkok 10900	Tel: +66-22-718-490 Mobile: +66-94-486-5546 E-mail: tpiyawan@yahoo.com
20.	Mr. Thawatchaivirut Thanet Supply Chain Solution Manager	LEO Global Logistics Co., Ltd 251-251/1 Soi Pakdee Rama 3 Road, Bangkorlaem Bangkok 10120, Thailand	Tel: +66 2 689 1122-421 Mobile: +66 8 24478802 Email : thanet@leogloballogistics.com Web: leogloballogistics.com
21.	Ms. Chanitnan Kultanan Lecturer, School of Engineering	Logistics Research Center University of the Thai Chamber of Commerce (UTCC) Bangkok, Thailand	Tel: +(66) 2-697-6730-1 Fax: +(66)2-692-3014 Mobile: +(66) 80-965-1110 Email: nidnan78@gmail.com ; chanitnan_kul@utcc.ac.th
VIETNAM			
22.	Ms. Phung Thi Hoa International Coordinator	Vietnam Automobile Transport Association (VATA) Hanoi, Vietnam	Tel: +84-46-286-1420 Mobile: +84-91-207-4975 E-mail: hoa63vra2010@yahoo.com Website: heiphovantaioto.vn
23.	Mr. To Van Hiep President	Vietnam Trucking Association, Danang, Vietnam	Tel: +84-51-139-433-49 Mobile: +84-90-350-3555 E-mail: dir-gen@saigonshipdanang.com Website: www.saigonshipdanang.com
24.	Mr. Nguyen Dai Nghia Deputy Head of Administration Department	Road Administration Department, Ministry of Transport	Tel: +84 976311255 Mobile: +84 915703008 Email: dainghiaqlgt2009@gmail.com
25.	Mr. Ngo Dai Thang Deputy Head	Database and Software Development Division Information Technology Center Ministry of Transport	Email: thangnd@mt.gov.vn; hangnd@mt.gov.vn

SPEAKER AND RESOURCE PERSON

Name and Position	Organization and Address	Contact
Mr. Li Hong Permanent Representative	Permanent Mission of P.R.China to UNESCAP, Bangkok Embassy of The People's Republic of China in The Kingdom of Thailand 57 Ratchadaphisek Road Bangkok 10400, Thailand	Email: escap@mfa.gov.com
Ms. Christine Soutif Independent consultant in Trade and Logistics	GMS Freight and Transport Association (FRETA) Phnom Penh, Cambodia	Mobile: +855 12 802 348 Email: chrissoutif@gmail.com Web:
Mr. Manzul Kumar Hazarika PhD Director (Project Operations) Geoinformatics Center	Asian Institute of Technology (AIT) P.O. Box 4 Klong Luang, Pathumthani 12120 Thailand	Tel: +66 2 524 6184 Fax: +66 2 524 6147 Mobile: +66-8-1826-3942. Email: manzul@ait.asia Web: www.geoinfo.ait.ac.th Skype: manzulhazarika
Mr. Angga Bayu Marthafifsa Geoinformatics Center	Asian Institute of Technology (AIT), Bangkok, Thailand	P.O. Box 4 Klong Luang, Pathumthani 12120 Thailand Tel: +66 2 524 6184 Fax: +66 2 524 6147 Mobile: Email: anggabayu@ait.asia Web: www.geoinfo.ait.ac.th

6.3. Organizing Team

Name and Position	Organization and Address	Contact
Dr. Watcharas Leelawath Executive Director	Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4153 Email: watcharas@mekonginstitute.org
Mr. Madhurjya Kumar Dutta Director	Trade and Investment Facilitation (TIF) Department Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4061 Email: dutta@mekonginstitute.org
Mr. Quan Anh Nguyen Program Specialist	Trade and Investment Facilitation (TIF) Department Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4071 Email: quan@mekonginstitute.org
Mr. Sa-nga Sattanun Program Manager	Trade and Investment Facilitation (TIF) Department Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4081 Email: sa-nga@mekonginstitute.org
Ms. Wen Hao Program Coordinator	Trade and Investment Facilitation (TIF) Department Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4092 Email: haowen@mekonginstitute.org
Ms. Sasiporn Phuphayploy Program Assistant	Trade and Investment Facilitation (TIF) Department Mekong Institute 123 Mittraphad Road, Khon Kaen 40002, Thailand	Tel: +66 (0) 43 202 4112 ext. 4096 Email: sasiporn@mekonginstitute.org



MEKONG INSTITUTE

Mekong Institute

123 Khon Kaen University
Mittraphap Road, Muang District
Khon Kaen 40002, THAILAND
Tel: 66 (0) 4320 2411-2 Ext 4092
Fax: 66 (0) 4334 3131
Web: www.mekonginstitute.org