**Terms of Reference**

**for Public Module Function Design and Development Service Contract**

**Of GEF-6 Guangdong Urban-Rural Logistics Integrated Distribution Demonstration Project**

**（Contract CFT/CS-1-Guangdong）**

The Department of Transport of Guangdong Province is taking on the Guangdong Urban-rural Logistics Integrated Distribution Demonstration Project (hereinafter the Project) which is under the China: GEF Efficient and Green Freight Transport Project on the 6th global environment fund grants. The Project aims to build the Guangdong Urban-rural Logistics Integrated Distribution Demonstration platform by applying the mobile Internet information technology, carry out the Guangdong - Qingyuan urban-rural logistics distribution demonstration, and promote the energy saving and emission reduction in urban-rural logistics distribution. Therefore, the Department of Transport of Guangdong Province (the client) is planning to hire a consultant to undertake the Public Module Function Design and Development Service Contract of the Guangdong Urban-rural Logistics Integrated Distribution Demonstration Project.

**1. Background**

**1.1 About the Project**

Freight and logistics is the key area of energy consumption and carbon dioxide emission in China. In order to support China's efforts to improve freight efficiency and reduce carbon emissions in the freight industry, the World Bank has used the sixth Global Environment Facility (GEF) grant to carry out the efficient and green freight projects in China to promote the structural emission reduction in the freight industry. Logistics distribution is an important part of freight logistics. With the rapid development of e-commerce and the acceleration of urban-rural integration, logistics and distribution in urban and rural areas have developed rapidly. However, the empty rate of vehicles returning to urban and rural logistics and distribution remains high. At the same time, township industrial products and agricultural and sideline products are difficult to be distributed into the city because of the high cost of logistics distribution. In order to reduce the empty rate of returning vehicles in urban and rural logistics distribution, promote the distribution of township industrial products and agricultural and sideline products to the cities, and achieve energy conservation and emission reduction in urban and rural logistics distribution, Guangdong province launched the demonstration project of integrated logistics distribution in urban and rural areas of Guangdong province under the framework of “China: GEF Efficient and Green Freight Transport Project”.This project aims to apply information technology to match vehicles and cargo for distribution vehicles between urban and rural areas, promote integrated distribution of urban and rural logistics in Guangdong province, and effectively reduce energy consumption emission of distribution vehicles for urban and rural logistics in Guangdong province. The project implementation is divided into three stages: demonstration preparation, demonstration implementation and summary evaluation. The project is expected to be completed at the end of December of 2022.

**1.2 About this task**

The consultant who undertakes this task shall, according to the project requirements, be responsible for the functional design, development and operation maintenance of the public module of integrated distribution of urban and rural logistics in Guangdong province, including the demand analysis, functional design, module development, module trial operation and module operational function maintenance of the public module of integrated distribution of urban and rural logistics in Guangdong province.

**2. Task Objectives and Requirements**

**2.1 Task objectives**

Based on the the existing logistics information system of the pilot company (Guangzhou Huaxin Trading Co., LTD.), develop the public module of integration of urban and rural logistics distribution of Guangdong province that can be used, monitored, promoted, and modified, thus forming the Guangdong urban-rural integrated distribution demonstration platform, providing information platform support for the integrated distribution of urban and rural areas in Guangzhou and Qingyuan, and ensuring the normal operation and monitoring during the demonstration period.

**2.2 Task contents**

The work of the consultant shall include but not limited to the following:

2.2.1 Carry out functional demand analysis for cargo owners, shippers and car owners of integrated urban and rural logistics distribution in Guangdong province.

2.2.2 Carry out functional design of the public module of integrated distribution of urban and rural logistics in Guangdong province.

2.2.3 Develop and improve the functions of the public module of integrated distribution of urban and rural logistics in Guangdong province.

2.2.4 Carry out two training sessions on the use of the public module for integrated logistics distribution in urban and rural areas of Guangdong province.

2.2.5 Carry out the maintenance of module functions during the demonstration period of Guangdong Urban-rural Logistics Integrated Distribution Demonstration Project.

**2.3 Task requirements**

The consultant shall complete but not limited to the following work:

**2.3.1 General requirements**

A. Vehicle owners of the urban and rural integrated distribution can upload the vehicle information and the loading status of the vehicle (including return trip) through the public module of the mobile terminal. The cargo owners from both urban and rural areas can upload the information through the public module of the mobile terminal such as and goods information, distribution demand and prices. The public module can achieve the functions such as online match for cargo and vehicles, the vehicle location tracking query, and online payments, etc..

B. Develop and form a public module for integrated distribution of urban and rural areas in Guangdong province that can be used, monitored, popularized and modified. Meanwhile, it has the monitoring function for the demonstration of Guangdong Urban-rural Logistics Integrated Distribution Demonstration Project.

C. Seamless connected with the existing logistics information system of the pilot company, and can run smoothly.

D. The data interface has good compatibility and can be popularized.

E. Module functions can be applied and modified by other logistics enterprises.

**2.3.2 Major functional requirements**

**A. Comprehensive functional requirements**

* Users can log in through PC and mobile phone APP
* Module data items should conform to the national and industrial standards related to logistics information
* Relevant data of the module can be seamlessly connected to the Baidu or AMAP (Gaode Map)
* The data interface of the module conforms to the relevant national and guangdong logistics distribution information standards

**B. Truck owner's functional requirements**

* Owner user registration and registration information maintenance
* Owner truck information binding and truck information maintenance
* Bind and maintain the account information of truck owner's receipt and payment
* Information release and management of truck owner to be matched and stowed
* Send order grabbing and matching information of the truck owner
* The truck owner dials the cargo owner's phone number directly
* Truck owner loading information and photo upload
* Truck owner unloading information and photo upload
* Truck owner collects payment
* The truck owner checks the cargo information released by the cargo owner
* The truck owner checks the cargo owner's credit information
* The truck owner consults relevant policies and freight rates standards
* Application for processing truck owners’ abnormal order

**C. Cargo owner's functional requirements**

* Owner user registration and registration information maintenance
* Bind and maintain the account information of truck owner's receipt and payment
* Information release and management of cargo to be matched and stowed
* Confirm the information of the adjusted stowage rate by the shipper
* The shipper calls the owner directly
* The shipper pays
* The shipper evaluates the quality of service provided by the truck owner
* The shipper checks the truck owner's credit information
* The shipper consults relevant policies and freight rates standards
* Application for processing shipper’s abnormal order

**D. Functional requirements of the management department**

* User registration and registration information maintenance
* Check the cargo information published by the truck owner and the cargo owner
* The sub-module with the monitoring function is installed on the Guangdong Transportation Logistics Public Information Platform, receiving monitoring data information that is desensitized, and clarifying the monitoring information interface standard
* Check urban and rural distribution monitoring information, see table 1 and table 2.
* Check urban and rural distribution monitoring information, credit information of truck owners and shippers, and provide the latest industry credit information of truck owners
* Consult relevant policies and freight rates standards, and provide the latest industry policy information

**E. Functional requirements of the pilot company**

* User registration and registration information maintenance
* User permission Settings
* Statistics of stowage information
* Review the registration of truck owners and shippers
* Review truck information
* Collect and upload desensitized distribution monitoring information, see table 1 and table 2
* Check and maintain the truck owner's latest credit information
* Consult and maintain relevant policy information
* Processing and feedback to the application of truck owners and shipper’s abnormal order

**F. Functional requirements of other logistics companies**

* Disclose the source code of the module
* Provide standardized module data interface standards

**G. Requirements of intellectual property of the module**

The intellectual property rights of the module is owned by the Department of Transport of Guangdong Province. The module should be provided for the logistics enterprises for free. The pilot company shall cooperate with the module developer to carry out module function design, provide the existing logistics information system environment for the module debugging and trial operation, use the module for the demonstration free of charge. The module developer shall be responsible for the module function maintenance during the demonstration of the pilot company.

**2.3 Major outputs**

The deliverables submitted by the consultant of the public module design and development shall include but are not limited to:

2.3.1 A public module for integrated distribution of urban and rural logistics in Guangdong province that can be used, monitored, promoted and modified. The module should be seamlessly connected to the existing logistics information system of the Pilot company, Guangzhou Huaxin Commerce and Trade Co., Ltd..

2.3.2 Documents of requirements analysis .

2.3.3 Software design documents.

2.3.4 Program code and descriptions.

2.3.5 Software manual, etc..

1. **Delivery time and requirements**

The consultation period is from the day of contract singing to December 31, 2022. The service time is expected to start in December of 2020.

3.1 By March 31, 2021, the functional requirements and design specifications of the module should be completed, and receive the World Bank’s no-objection.

3.2 By August 31, 2021, the module function development and deployment should be completed, the module should be connected with the existing logistics information system of the demonstration enterprise and put into trial operation, and a public module user training will be provided.

3.3 By October 31, 2021, conduct the preliminary test after completing the following issues: according to the feedback of the trial operation, improve the function development of the public module, connect with the existing logistics information system of the demonstration enterprise, submit the program code description and software user manual, and finish the one-month official operation.

3.4 By December 31, 2022, improve the module functions, carry out system maintenance, and complete the final acceptance of the system according to the expert opinions of the preliminary inspection and review.

1. Requirements on consultant qualification

4.1 The consultant’s achievements and experience required to undertake this task: consultants should have the experience in the function design and development of software such as warehouse management system, transportation management system, and order management system, etc. or e-commerce supply chain. Please submit contract and other supporting materials.

4.2 The personnel involved in this project include but are not limited to: software development project manager, software demand analysis and design staff, software development programmer, software tester, software training personnel and software operation and maintenance personnel. The consultant may reasonably assign personnel according to the requirements of this Terms of Reference, provided that all personnel involved must meet the following requirements:

4.2.1 Software development project manager (one person): software engineer qualification, bachelor degree or above in computer software related major; experience in the function design and development of software such as warehouse management system, transportation management system, and order management system, etc.) or e-commerce supply chain.; has the rich organization and the coordination ability.

4.2.2 Software demand analysis and design staff (no less than 2 persons): bachelor degree or above in computer software related field; experience in project requirements and design of logistics software or e-commerce supply chain system.

4.2.3 Software development programmer (no less than 4 persons): bachelor degree or above in computer software; experience in project development of logistics software or e-commerce supply chain system.

4.2.4 Software tester (no less than 2 persons) : college degree or above in computer software; experience in software testing; have the ability of organization and coordination.

4.2.5 Software training personnel (no less than 2 persons) : college degree or above in computer software; experience in the training of logistics software or e-commerce supply chain system.

4.2.6 Software operation and maintenance personnel (no less than 2 persons): college degree or above in computer software; experience in the operation and maintenance of logistics software or e-commerce supply chain system.

5. **Facilities and support provided by consultants**

The consultant shall provide the following facilities and support during the completion of the consultation service.

5.1 Provide the site and related equipment for module function requirement and design discussions, mid-term discussion of module function, and the mid-term review and final acceptance.

5.2 Provide the expert fee and meeting fee for the module function demand and design discussions, the mid-term discussion on module function, the mid-term review and the final acceptance.

5.3 Provide the costs of accommodation and transportation for relevant leaders and experts to participate in the module function demand and design discussions, the mid-term discussion on module function, the mid-term review and the final acceptance.

The financial proposal submitted by the consultant shall include the three expenses mentioned above and other expenses to be borne.

**6. Facilities and support provided by the client**

The client shall provide the following facilities and support during the completion of the consultation service.

6.1 Provide module development related materials, and propose specific work requirements

6.2 Coordinate relevant units and enterprises to carry out module functional requirement assessment.

6.3 Designate a project liaison.

6.4 Coordinate the pilot company (Guangzhou Huaxin Trade Co., LTD.) to provide relevant materials and data interface of its existing logistics information system.

6.5 Review the module development work plan submitted by the consultant and track the progress of the module development work.

1. **Disbursement plan**

7.1 Sign the contract and pay 15% of the total contract price.

7.2 Pay 30% of the total contract price after the consultant completes the module functional requirements and design specification documents as required and obtains no objection from the World Bank.

7.3 Pay 45% of the total contract price after the consultant, according to the requirements, completes the public module function of the Guangdong Urban-rural Logistics Integrated Distribution, obtains a certificate of one-month normal operation of the module function issued by the pilot company and passes the mid-term review organized by the Department of Transport of Guangdong Province.

7.4 The remaining 10% of contract price shall be paid within 30 days upon completion of the maintenance of the public module and passes the final review of the project.

**8. Financial quotation**

8.1 Consultant’s remuneration shall be deemed to have included the full cost of the service tasks of Function Design and Development Service of the Guangdong Urban-rural Logistics Integrated Distribution Public Module, including but not limited to: personnel expenses, reimbursable expenses, company management fee and profits, etc..

8.2 The consultant shall take full account of the costs incurred in undertaking the services and the consultant's remuneration shall be in a fixed lump sum.

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## Table: Waybill monitoring information of Guangdong Urban-rural Logistics Integrated Distribution

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| No. | Name of Pilot Company | Transportation Information | | | | | | | | Operating truck information | | | | | Operator information | | |
| Date of loading | Date of receipt | Place of loading | Place of receipt | Type of goods | Weight of cargo (ton) | Driving distance (km) | Operating distance (km) | Truck license number | License plate type | Truck classification | Road transport certificate No. | Truck payload (ton) | Driver’s name | Occupational qualification category | Certificate No. |
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Note: The qualifications are classified into four categories: operating road freight transport drivers, road dangerous goods transport drivers, others and none.