

APPLICATION FORM for Smart City Project Formulation Study

(1) Project Title: Pre-FS for Smart Siem Reap (based on the roadmap for Smart Siem Reap)

(2) Name of the city: Siem Reap (The Kingdom of Cambodia)

(3) Category of the study: B (Pre-Feasibility Study)

(4) Justification of the Project:

- Present condition of the Smart City Project in the target city:

Currently, Siem Reap City is moving toward the smart city's conception with several on-going development projects and studies such as:

- The Basic Survey for Smart City in Siem Reap by JICA working on the challenges in five key sectors including tourism, mobility, waste management, safety and security as well as data management. This survey also aims to examine and propose a roadmap for Smart City, which include programs of solutions introducing advanced technologies to solve the urban problems of the five key sectors.
- The development of 38-road construction projects funded by the Cambodian government which is expected to finish at the end of 2021. This project will be addressed with caution, acknowledging environmental improvement and protection, resident's convenience and smart city development.
- The Tourism Development Master Plan 2020-2035 by the Ministry of Tourism (MoT) for a new city where it will accommodate high-rise buildings or constitutions. The aim of this development is to support the old city of Siem Reap and also a development that will not affect the cultural heritage.
- Siem Reap New International Airport (also known as the NSRIA project) is a proposed airport development to replace the existing Siem Reap Airport. A site 50km away from the existing facility has been designated by the government, which seeks to protect a World Heritage Site that includes Angkor Wat.
- The development project by the NagaCorp with the vision to promote Angkor Wat and Naga World as twin tourism icons in Cambodia - a tale of two cities which is expected to be completed by approximately 2025. This project will consist of a Naga Water Theme Park, two hotels, a non-motorized boating canal system with landscaping, a China Town and indoors interactive Hi-Tech Theme Park.

- Sectoral development policy of the local government/municipality on the smart city project in the target city:

As responsible governmental bodies, Siem Reap Provincial Hall issued a letter for establishing the Smart City Committee where H.E. Tea Seiha, the governor, is the president. The team has roles and responsibilities such as:

- Review and raise projects and investment program related to the smart city
- Meet, discuss and exchange ideas with development partners
- Develop a work plan to implement projects
- Cooperate and facilitate the studying process as well as the projects' implementation
- Report as well as ask for decisions and suggestions from relevant ministries, national institutions and provincial councils.
- Integrate and evaluate planning and projects between the Siem Reap Provincial Hall, relevant departments under ministries, and Siem Reap municipal administration.
- Supported by deputy prime minister, and minister of interior on the establishment of working group in ASEAN Smart Cities Network that includes Phnom Penh, Siem Reap City and Battambang City in Cambodia.

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Currently, the Smart City Committee remains as virtual organization and actual action is expected together with progress of existing Smart City related projects.

As sectoral development policy, Siem Reap Provincial Administration is currently working on the formulation of a roadmap towards Smart City in Siem Reap with the support of JICA (The Basic Survey for Smart City in Siem Reap).

- **Outline of the Study:**

Siem Reap Provincial Hall would like to conduct pre-feasibility studies on the implementation of the following projects, of which all are proposed in the draft roadmap towards Smart City in Siem Reap;

Project No.1: **Smart City Data Collection & Analysis** (to establish an integrated data collection and analysis system of the urban environment)

Project No.2: **CCTV System Introduction** (to install CCTV camera systems to monitor the street environment)

Project No.3: **Official Parking System Introduction** (to install parking sensors and develop vacancy information systems)

Project No.4: **Traffic Signal System Improvement** (to install and replace new traffic lights and traffic control system)

Project No.5: **QR Code Development** (to develop tourism related services using QR codes and increase convenience during the visitors' stay in Siem Reap)

Project No.6: **Rental Cycling Service** (to diversify transportation options for tourists and increase freedom of mobility)

Project No.7: **Landfill Management System Introduction** (to establish monitoring guidelines for landfill management)

Project No.8: **Garbage Collection IoT Installation** (to install garbage boxes with sensors in public areas to collect separated garbage)

Priority projects are Project No. 1~4. They are assumed to be installed as a package in the city center (Pub Street area) in its initial stage of implementation.

- **Purpose (short-term objective) of the Study:**

The purposes of the Study are as followings,

- To clarify conditions for package implementation in a particular area, which is the city center (Pub Street area) (for Project No. 1~4).
- To clarify conditions for the establishment of an integrated data collection and analysis system for project No. 1~4, as well as data regarding other existing infrastructure (for Project No. 5)

Both of the above shall include the following items;

- Examination of existing infrastructure
- Examination of existing regulations
- Conceptual design of the project components
- Rough estimation of the development cost
- Implementation and operation structure proposal
- Examination of a business model
- Social and environmental consideration survey

- **Goal (long-term objective) of the Study or entire project:**

For the long-term, Siem Reap Provincial Hall would like to develop the Internet of Thing (IoT) platform with a Big Data technology platform that will give Siem Reap real-time knowledge of data related to city functioning, such as mobility management, energy efficiency, population management, local meteorology, etc., and thus the potential ability to predict and anticipate all kinds of situations, including critical events and provide optimized urban services to citizens and visitors. With the official

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regulation on privacy, data ownerships and security from the government in the near future, the use of big data and open data will enable the Siem Reap Provincial Hall to tackle problems in the city center in the right way through innovative ideas and smart technologies as a “common good” that can improve the quality of life for the local citizens as well as tourists. Siem Reap Provincial Hall would also like to invite innovative private business that can provide urban services that correspond to our long-term goals.

The planned goals of the entire project are as followings:

- Correlate and integrate the maximum data related to the city (municipal and non-municipal databases, sensor systems, social networks, etc.)
- Enable the different urban services to be managed both horizontally (between departments) and vertically (via a global supervision center)
- Increase the efficiency and efficacy of the urban services, helping to improve predictability and anticipate emergencies.
- Provide real-time support to decision-making and improve citizens’ quality of life.
- Develop infrastructure based on open source Big Data technology that uses single-window access and internal data management.