การพัฒนายานพาหนะขับขี่อัตโนมัติและการจัดการเดินรถระบบขนส่งมวลชน
แบบอัตโนมัติสำหรับใช้งานในพื้นที่เมืองอัจฉริยะ (Smart City) สถานีกลางบางซื่อ

Development of Autonomous Vehicles and a Public Fleet Management System
for Demonstration in a Smart City of Bang Sue Grand Station

Source of Fund   Transport and logistics integration development plan FY2565

Collaborative agency   State Railway of Thailand

Duration   1 Yr 3 months (15 December 2021 - 14 March 2023)

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Bang Sue Grand Station is an important transportation hub of Thailand, connected with 3 high-speed train lines connecting 3 airports (Don Mueang Airport, Suvarnabhumi Airport and U-Tapao Airport), Airport Link, MRT and inter-city lines. Besides connecting to the Eastern Economic Corridor or EEC via high-speed train, Bang Sue Grand Station has surrounding area, covering an area of over 1800 rai which has the potential to be developed into a smart city.

According to JICA study report (The Study on Development of Smart City Concept for The Bang Sue Area, 2020], smart city development consists of 3 main foundations: 1) Smart Mobility 2) Smart Energy and 3) Smart Environment. In terms of Smart Mobility, the emphasis is on increasing convenience and safety for passengers, reducing the use of personal vehicles (shared mobility) and reducing the impact on the environment. One of the basic concepts of Smart Mobility is the use of IoT (Internet of Things) technology in conjunction with the development of automated vehicles. The communication/connectivity via telecommunication systems such as 5G, 6G systems must be smooth, fast and reliable to run automated transportation system efficiently.

Under this project, 5 self-driving vehicles (golf carts) were built together with a fleet management system and remote vehicle control system. These 5 autonomous golf carts and fleet management systems were tested in a specific area of Bang Sue Grand Station. Automated golf carts are equipped with electronic controls for steering, brake and accelerator via Drive-by-wire system. 3 major obstacle-detecting equipments, including 1) 3D laser scanners 2) motion sensors, and 3) cameras, collect surrounding environment data and all data will be calculated together with other data to control and navigate vehicles. Ride hailing service is also available by scanning a QR Code to download Service App and passengers can call a car to pick up and drop off at destination point.