**臺北市政府交通局**
Department of Transportation,Taipei City Government

# 臺北市公車動態系統及智慧型站牌
## Smart Transportation

**本展場展出本處設置之LED智慧型公車站牌、及透過太陽能板供電搭配電子紙顯示的智慧型公車站牌，其中太陽能電子紙站牌，讓公共運輸更環保，也更方便快速設置。**

The Dynamic Bus Information System uses advanced communication technology to transfer locations of buses in real time and calculate the estimated time of arrival at each station, which is provided to the public in various ways such as website, APP and intelligent stop signs. The system has been further developed to provide a much more stable service through the Operation Management System.
From the existing LED display, the intelligent stop sign has developed a solar-powered electronic paper display that does not require city electricity and can be attached to existing poles. It is simple and fast to set up, energy-saving and environmentally friendly.

## 臺北好行-協助視障者搭公車及過馬路服務
## Assist the visually impaired passengers to take bus and cross the road smoothly with IoT

「協助視障者搭公車」服務結合後臺、車機及提醒設備提供公車司機使用者候車站位的訊息;使用者亦可透過**App**得知公車到站即時的訊息及上/下車提醒推播服務。「協助視障者過馬路」服務於路口佈設藍牙設備,讓使用者可以透過**App**自動觸發路口有聲號誌設備,並於**App**顯示行人綠燈剩餘秒數,讓視障者可以更安全地通過路口。

Combined with the server, OBU and warning devices, the system transfer the reservation to OBU to notice the bus drivers. The user could get information of bus arrival time and Push Notification of boarding/getting off service. ''Assist the visually impaired passengers to cross the road smoothly with IoT'' Setting up Bluetooth device at the intersection, so that users can automatically trigger the ''Audible pedestrian signal'' through the APP, and the information of the seconds of pedestrian green light will display on the APP to assist the visually impaired can cross the intersection more safely.

## 智慧轉運站
## Smart Bus Station

　　在這數位化的時代,轉運站也跟上智慧化的潮流,以**E-tag**技術控管車輛進離場,另別於以往傳統排隊購票模式,由臺北轉運站首先開發出整合多家業者的購票系統、快速搜尋同時段多家業者的班次資訊、 線上預定自選座位以及利用**QR Cord**電子票券無紙化登車等多元服務的**app**，期待推廣給更多用戶，為轉運站開啟新的智慧篇章。

　　Taipei Bus Station, which uses advanced E-TAG technology to perform fleet monitoring, provide real-time schedule display, abnormal event detection, platform door control. TBS APP integrates the majority of the ticketing system of freeway schedule bus service companies at the Taipei Bus Station, and provides other companies who did not have ticketing system to establish an online ticketing system. In addition, this APP helps passengers to instantly view the information of departure time, and fare of multiple operators on the same route. TBS APP will also provide consumers integrated marketing services, travel and event information of local government for passenger, and feedback travel information to the competent authorities for travel research.

**AI智慧交控之應用**
## AI Intelligent Traffic Control Application in Taipei

　　臺北市自**108**年起推動智慧號誌,利用**AI**影像辨識技術,即時分析人車需求量,動態調控號誌時制,改善紓解效率與行人安全,現已建置**143**處智慧號誌,減少旅行時間**9%**及夜間幹道空等**32%**。**AI**科技亦應用於偵測交通事件,精準偵測壅塞、事故、違停及施工,即時於警廣、**CMS**提醒民眾提前改道或減速,降低交通衝擊,現已完成**40**組偵測設備。

Taipei City has developed 143 intelligent intersections since 2019, including dynamic control system for congestion improvement and traffic - responsive signal control system for green time efficiency at intersections. Use AI image recognition to analyze the demand for pedestrian and vehicles in real time, and dynamically adjust the traffic signal timing plan to effectively improve Level of Service and pedestrian safety. At present, 143 intelligent intersections have been reducing travel time by 9% and empty arterial roads at night by 32%. . AI image recognition also combined with traffic event detection, identify congestion, car accidents, parking violations and construction in real time. Once the road event be detected, the information will be sent back to the traffic control center immediately. For reduce traffic shock, notify the traffic police to deal with it, and display information on the CMS to reminded the driver change-laned or slow down at the same time. At present, Taipei City has 40 sets of traffic event detectors.

## YouBike 2.0公共自行車
## Bike Sharing System-YouBike 2.0

「**YouBike 2.0公共自行車**」系統,採車上機及輕樁設計概念,降低租賃站設站限制,讓租賃站點「**更近 更密**」!車輛上搭載智慧車機作為借還之操作平臺,具備文字顯示與音效功能,操作便利且直覺;亦新增**QRcode**掃碼租車服務,提供使用者更多元便利的租借服務!一起來體驗智慧城市不可或缺的大眾運輸子系統-**YouBike 2.0!**

The "YouBike 2.0 Bike Sharing System" adopts the concept of on-board machine and lite dock design to reduce the limit of installation at YouBike stations and make all stations "Closer and Denser" to you! YouBike 2.0 is equipped with a smart panel as the operation platform for rent and return, with not only the text display function also a QRcode scanning rental service, providing members with more convenient ways of various rental services!  Partial adjustments have been made to YouBike 2.0 as well, making the operation more user-friendly!  Let's explore this smart city with the indispensable sub-system of the mass transportation - YouBike 2.0!

## 無柵欄式停車場智慧管理
### Intelligent Management of Gate-less Parking Lot

應用智慧車柱整合油車及電動車停車、充電混合停車需求,將停車、充電、繳費,以智慧 AI 管理並結合多元繳費服務,達到「智慧化無人管理」、「智慧化停車、充電」、「智慧化多元繳費」3i 目標,開創全新營運服務模式,並適用於路邊及路外平面停車場運用,不受限場地、環境應用。

We use the LPR pole (License Plate Recognition pole) and AI technology to merge the 3i services: intelligent parking, intelligent EV charging and intelligent multi-payment into an one-stop service. This innovative service is boundary-less and completely versatile to both roadside and off-street parking environments.

**台北捷運列車智能監督預警系統(TSIS 2.0)**

透過新增各類IoT感測元件(例如:壓力、溫度、振動等)、車廂資料收集模組、TSIS機上盒及4G路由器等設備,利用自行開發列車智能監督預警系統軟體,以即時監測列車重要設備的運轉狀態及故障訊息。當列車設備有異常狀態時,能夠即時掌握,並迅速將故障排除,避免造成列車延誤。

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## Metro TIMES捷運人流資訊管理系統
## Transit Information Management Expert System

**Metro TIMES運用IoT技術、AI機器模型演算、導入數據轉型,提供行控中心列車即時人流資訊可依人潮進行班距調整、站務人員可適時啟動人潮管制。車廂擁擠度資訊顯示於台北捷運Go App與月台電視,提供民眾選擇人潮較少的車廂上車,提升搭乘舒適度。另建置具有空間3D模型供使用者快速掌握即時人流資訊。**

The Metro TIMES (Transit Information Management Expert System) is the combination of IoT technology, AI machine learning, and digitized data into one single platform. By providing real-time passenger flow statistics, the TIMES can help make train scheduling and crowd control timelier and more straightforward tasks for the Operation Control Center (OCC). It can also display the current crowdedness levels of incoming trains on both platform TVs and the Go! Taipei Metro app, guiding passengers towards less crowded cars to make their journey more comfortable. The addition of a 3D spatial modeling function allows users to grasp live passenger flow conditions at a glance.