

国土交通省

第2回交通ソフトインフラ海外展開支援協議会（JAST）



ブルネイにおけるバス事業のデジタル化 成果報告

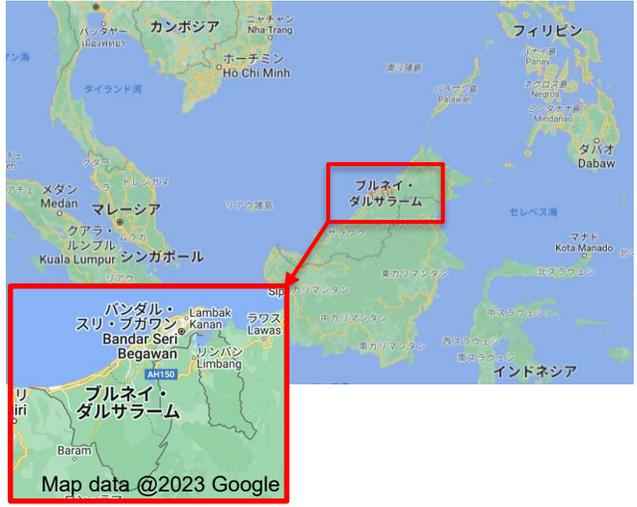
Zenmov株式会社

2023年6月8日



プロジェクトの背景・概要

■ブルネイの地図



■ブルネイの自然



■ブルネイの基礎情報

面積	5,765㎡（三重県とほぼ同じ）
人口	459,500人（2019年）
経済	<ul style="list-style-type: none"> 豊富な石油・天然ガス生産で安定した経済だが、エネルギー天然資源への過度な依存の脱却を目指している。
交通	<ul style="list-style-type: none"> 当社試算によると、有効免許保有者1人当たりの車保有台数は1台以上の超車社会である。 唯一の公共交通はバスだが、定時性が低い、車両が古い、乗客の大半が外国人労働者で、ブルネイ一般の人々には普及していない。

■首都バンドルスリブガワンのモスクと車社会の様子



ブルネイ政府の意向



- ブルネイ政府はバス事業のデジタル化を通じ、首都バンドルスリブガワン市（BSB）のスマートシティ化や公共バスの利用者増加を目指したい。

Zenmovの実施事項



- 課題解決に資する公共交通システム（バス）の導入を行い、BSBにおける「デジタル化による公共交通の利便性向上」をSmart JAMP*で支援した。（2021年度プレFS、2022年度パイロット事業を実施）

* Zenmov(株)、(株)オリエンタルコンサルタンツグローバル、(株)交通総合研究所で共同提案



ブルネイでの事業展開

2022年度 Smart JAMP

ブルネイ・ダルサラーム国・バンドルスリブガワンにおける、スマートシティ実現に向けた調査検討業務において、首都の**全てのバス**を対象に、パイロット事業を推進（2023年以降も運用は継続中）

➡ 公共交通（=バス）のデジタル化による利便性向上・利用促進を目指す

■ブルネイの公共交通（=バス）



■スマホ・ドライバーアプリによる乗降数の記録、車間調整指示



■800箇所以上のバス停の正確な位置情報を整備

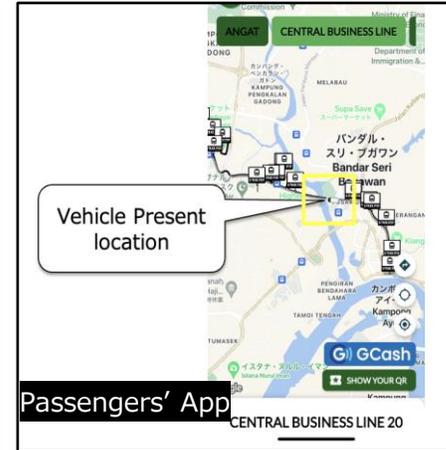


- ・乗車実態データの蓄積、分析
- ・乗客向けアプリの提供（バス位置表示、ETA）
- ・車間調整機能
- ・運転挙動データ取得
- ・バス停データの取得 等

■運輸通信省オフィス入り口に設置のモニターにバス位置表示



■乗客のスマホで、バス位置と到着時間の確認が可能

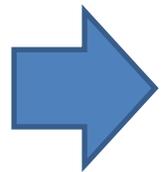


データ分析

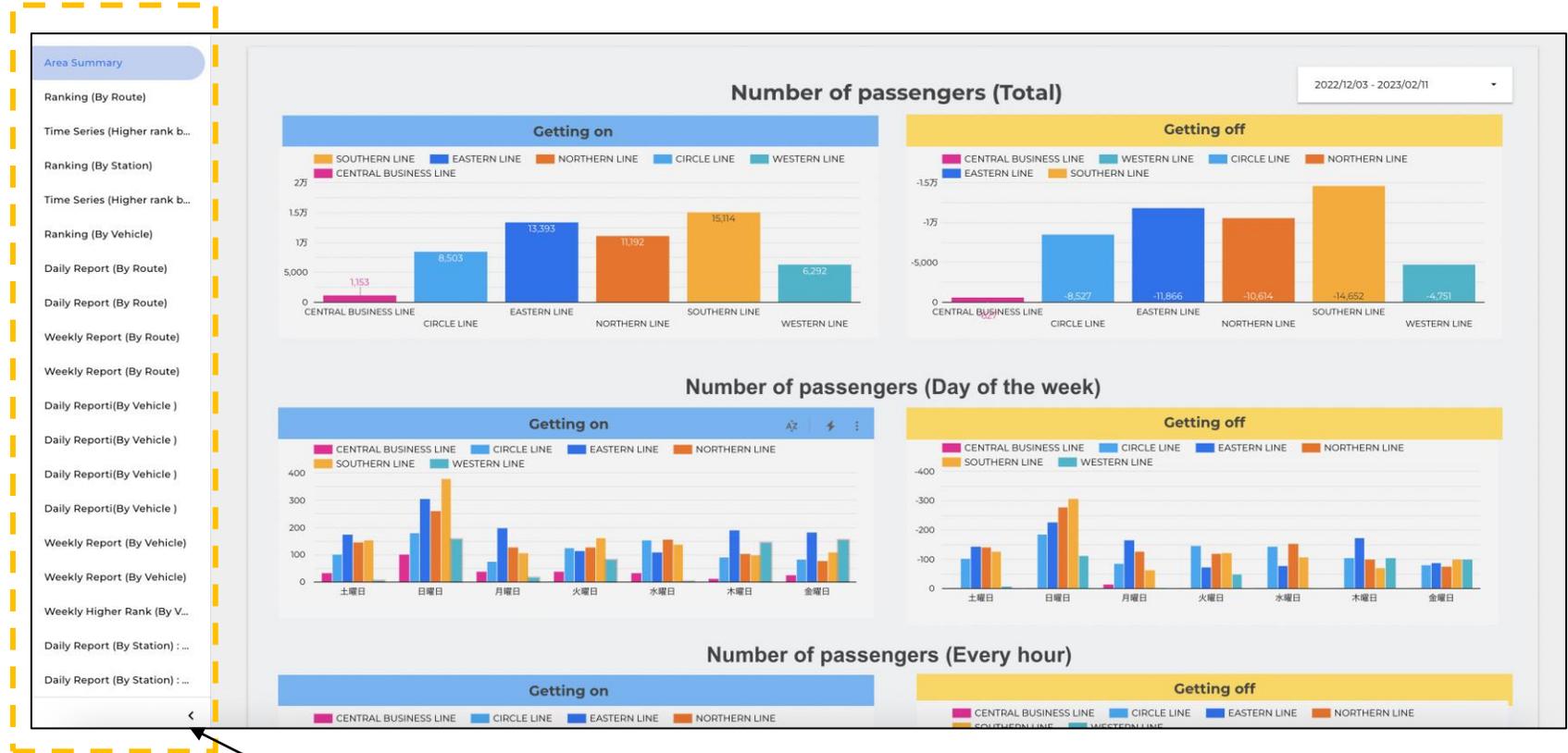


100以上の分析チャートを作成し、ブルネイの首都の公共交通バスの**人気路線**、**時間帯毎の乗車の傾向**、**ドライバーパフォーマンス**等进行分析した。

データの取得



分析チャートの例



100以上の分析チャート

署名式（2022年12月3日） & メディア報道



ブルネイ運輸通信省（MTIC）の立ち会いのもと、現地バス事業者とパイロット事業の署名式を行い、現地メディア（新聞、テレビニュース）でも多数、取り上げられた。

■ 署名式（上・下）



■ 『Borneo Bulletin』の新聞報道

左：署名式翌日（2022年12月4日）の記事、右：署名式翌週（2022年12月8日）の解説記事

En route to improved bus services

Strategic Plan and the ministry's vision towards becoming a 'Connected Smart Nation'.

The public can now access real-time information on the availability of buses on their routes thanks to the new mobile app Smart Mobility Operation System (SMOS).

This comes following a memorandum of cooperation signing between Zenmov Inc and five bus operating companies for the Pilot Project Bus Passenger Information System (PPBIS).

The pilot project sees collaboration between the Ministry of Transport and Infrastructures (MTIC) of Brunei Darussalam and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan, through the Smart City Mutual Partnership (Smart JAMP) programme under the ASEAN Smart Cities Network (ASCN).

The pilot project is part of government efforts to improve the quality of the public bus transportation system, in line with the infrastructure and action plans of the MTIC 2025.

The signing ceremony at the MTIC involved Syarifah Nur Hafizah and Pengarah Projek Sistem Pengangkutan Bersepadu (Transport) at the MTIC Hajj Muhammad Nuzul bin Hajj Asyraf and five bus operating companies for the Pilot Project Bus Passenger Information System (PPBIS).

The event continued with the launch of SMOS, which can be downloaded from Google Play Store and Apple App Store.

Acting Deputy Permanent Secretary (Transport) at the MTIC Hajj Muhammad Nuzul bin Hajj Asyraf offered a backdrop of the national public bus service, which has enjoyed a long history since its introduction in 1988. He also touched on Asean Smart City's commitment in nurturing the service between Brunei Darussalam and Brunei Darussalam.

He said, "This was then followed by several buses that began operating for the Muara and Gadong routes in 2016."

"Today, 11 companies are involved in public bus service activities in the country, with five companies operating for the Muara District, one for the Seria District and five that service the Seria to Bandar Seri Begawan route."

He acknowledged the need to iron out the challenges faced by the public bus transport system. They include the lack of signage, the event efforts to improve the public bus transportation system the pilot project is being implemented," Hajj Muhammad Nuzul said.

Zenmov Inc President and Chief Information Officer Sumio Tanaka also discussed the project.

Lifestyle

'I was never far away' Page 16

A bird's eye view of Bandar Seri Begawan. PHOTO: LEW CHEE SHANG

Jungle Carnival beckons

Auto News

The Jungle Carnival at the Abode Resort and Spa invites families to explore and experience Sandakan District.

The two-day event which ends at 1pm today, is open to all with an admission fee in place, affording a carnival like atmosphere to all.

"We want to provide something for the entire family to enjoy, especially those who have never been to the Abode," Davis said.

"When people think of the Abode in Sandakan, they think of it as a far away destination. We are only a few minutes away since you've reached the end of the bridge, we are pleased to learn about our travellers' reaction and their experience while here," the general manager added.

The carnival also features the first ever 'Smash in The Jungle Brawl' and grand prize tournament co-organised by KhaMa Media and KhaMa.

"Adults can enjoy the tournaments, while children can enjoy the carnival like games," Davis added.

Children have a go at a carnival game (above) and visitors watch the tournament (below).

The Abode General Manager Davis Suresh. PHOTOS: ADIB NOOR

A smooth ride

An overview of a pilot project aimed at providing real-time information on bus availability in the Brunei-Muara District.

Transport, and Tourism (MLIT) of Japan to support smart city development in ASEAN cities.

The Pilot Project Bus Passenger Information System (PPBIS) is a digitalised bus operation system in the future," he said.

Tanaka was in Brunei several weeks ago to ensure that the pilot project will be implemented smoothly. "We visited over 800 bus stops in Bandar Seri Begawan (BSB) to obtain accurate location data and we named all bus stops. We carefully conducted the mapping process of a unique bus operation management system suitable for Brunei based on information obtained through the pilot project."

"We are looking at improving convenience for passengers and contribute to increasing revenue for bus operators. In addition to the use of the system by the locals, we will also make the system more useful for tourists and broaden the base of users," he added.

Information on the background of the project notes that the Substrate is a car-oriented society, and the use of buses, the only form of public transportation, has not been popularised locally. There are concerns about traffic congestion due to the increase in the number of cars in the future. There is a need for public transportation due to the recent shift to two-generation families.

From the perspective of reducing greenhouse gas emissions under the national vision for sustainable economic growth (Brunei Vision 2035), the project aims to establish a "public transportation management system" to break away from a private vehicle through the efficient operation of buses.

As a method, the digitalisation of public transportation buses will be promoted to realise the introduction of highly convenient bus services through operational management and visualisation of current bus locations and arrival times.

To improve public bus services under the pilot project, an application (trial version app) will be introduced for smartphones, visualisation of bus operation management (introduction of large monitors showing information of bus locations), and establishing names of about 800 bus stops throughout BSB. Also mentioned is to identify further specific needs and issues for full-scale implementation.

The pilot project contents include: building the operation of the following information technology (IT) systems to gather specific needs and issues for the future: visualisation of bus location and arrival time, provision of the smartphone application for passengers, installing large screen monitors at MTIC (JPO) to digitalise bus operation status, visualisation of transportation demand and generation of optimum schedules, and monitoring the number of boardings and adjustment of vehicle intervals.