

The Toyota Mobility Foundation announces results of the "City Architecture for Tomorrow Challenge" (CATCH), a project focused on bringing innovative and data-driven mobility solutions to Kuala Lumpur, Malaysia

Kuala Lumpur, Malaysia (13 February 2023) - The Toyota Mobility Foundation (TMF), a non-profit organization, announced the results of CATCH – The City Architecture for Tomorrow Challenge – a 3-year data-driven innovation challenge launched in February 2020, co-organized by Deloitte Future of Mobility Solution Centre (Deloitte), and delivered in partnership with Kuala Lumpur City Hall (DBKL) and the Malaysia Digital Economy Corporation (MDEC).

Following an initial roadshow and call for applications, the CATCH organizing committee received over 97 applications from 20 countries globally. These applications underwent a rigorous selection process including Proof of Concept (POC) and Minimum Viable Product (MVP) development, which took into account criteria such as creativity, feasibility, and sustainability. Considering these, along with the overall objective of enhancing the lives of Kuala Lumpur residents and forwarding TMF's vision of providing Freedom of Mobility for All, two winners were selected – Numina from the United States and Kerb from Australia.

Numina offers privacy-first sensor technology to analyze the movement of people and goods, utilizing these insights to generate recommendations to improve city design and transportation infrastructure.

Kerb brings a solution that increases efficiency of mobility by allowing users view and book available public and private parking spaces from its mobile application.

Through collaboration with traffic and data experts from the DBKL, both winners successfully conducted a proof-of-concept trial in Kuala Lumpur.

Main Activities and Results

Numina deployed sensors across a total of nine major locations in Kuala Lumpur, considering the possibilities of enhancing safety and traffic flow in the areas selected. Its implementation generated the following findings:

- Potential conflict points between pedestrians, 2-wheel, and 4-wheel vehicles along Jalan Chow Kit, with individuals crossing despite the presence of a nearby pedestrian bridge
- Potential opportunity to enhance traffic flow along Bukit Bintang Crossing, one of the busiest streets in Kuala Lumpur, by potentially optimizing timing of traffic light signals as well as revisiting schedules of public transportation to reduce pedestrian and passenger dwell time especially during peak hours

- Potential opportunity to increase safety of 3,000 daily pedestrians and drivers utilizing Lorong Gombak and Lorong Tuanku Abdul Ramahn through the installation of a cross walk or designated U-Turn lane to reduce conflict points

Overall, through the CATCH project, Numina could enhance its ability to detect motorcycles, a key mode of transportation in Southeast Asia, and one with the highest usage and accident rates in the region.

As a next step, Numina has begun discussions with DBKL on how the results from its trial implementation may potentially lead to additional concrete solutions for the city, as well as on how its technology solution may potentially be utilized in other areas.

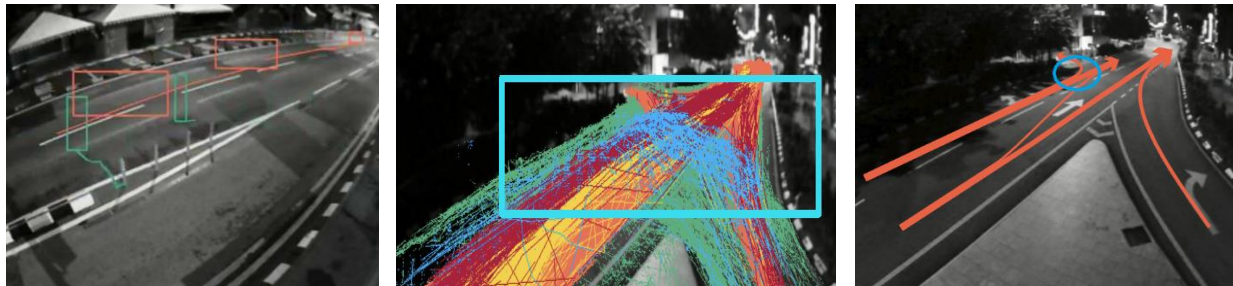


Figure 1 Left image: Numina computer vision image of pedestrians (green boxes) and vehicles (red boxes);

Figure 2 Middle image: Numina computer vision image along Lorong Gombak showcasing potential conflict points between motorists making a left turn (blue lines) and other vehicles traveling along a straight path (other colors)

Figure 3 Right image: Street view of middle image reflecting motorists turning from Lorong Gombak to Lorong Tuanku Abdul Ramahn 7

Kerb on the other hand, through its implementation across six car parks in Kuala Lumpur, succeeded at:

- Increasing total bookings of private car parks by 2,000 bookings, with majority being users who take their vehicles from their homes and proceed to utilize public transportation after parking
- Achieving repeat customer rates of 94% for private car parks and 79% for DBKL car parks
- Achieving customer satisfaction rates of 96%, especially due to its ability to accept multiple payment methods as well as visualize parking availability

Throughout the CATCH project, Kerb addressed customer concerns around parking supply by allowing users to view and book available spaces in key areas where DBKL and other public and private entities such as Prasarana operate. Following this project, Kerb intends to further expand its service to other key cities in Malaysia and across Southeast Asia.



Figure 4 Kerb Implementation in Kuala Lumpur

Conclusion

Datuk Seri Hj. Mahadi bin Che Ngah, Mayor of Kuala Lumpur, stated: “upholding the quality of life of the citizens has always been my primary priority. We constantly strive to introduce solutions that meet changing needs, and the TMF CATCH Challenge sufficiently complements this objective. The winner implementations have proven the immense potential of technology to solve social issues, and we are looking forward to continuing what we have started with TMF by scaling similar solutions in the coming years”.

MDEC CEO, Mahadhir Aziz, reflecting the vision of MDEC shared: “MDEC’s partnership with TMF for CATCH is a testament to our role as the lead digital agency in playing an active role of demonstrating data as the catalyst to resolve mobility issues in Kuala Lumpur. Through well-grounded public and private data sharing, we have successfully transformed data to life. This partnership aligns with the Malaysia Digital initiative of enabling businesses and the Rakyat (the people) to be part of the digital revolution and digital economy.”

TMF Executive Program Director Pras Ganesh stated: “Through the principles of innovation, sustainability and partnership, Toyota Mobility Foundation aspires to take the lead in creating the future of mobility, which we envision to be one promoting the concept of ‘Mobility for All,’ with resident mobility needs at the core of our attention. We believe in synergistically using data and human insights in identifying and eliminating barriers which prevent people and goods from moving freely. The CATCH program was the first of its kind, bringing together a global cohort of innovators who were dedicated to improving the lives of the residents of Kuala Lumpur. While this project ends with valuable findings to enable freedom of mobility, and for each winner closely collaborating with the Kuala Lumpur government to scale their solutions, we at TMF will continue to strive to achieve our vision of enabling more people and goods to move to more places in an equitable, sustainable and safe manner. This is a landmark project for us at TMF, and we would like to thank all our partners - DBKL, MDEC, Deloitte and many others- whose invaluable support made this 3-year challenge a success and a blueprint for future programs.”

About Toyota Mobility Foundation

The Toyota Mobility Foundation (TMF) was established in August 2014 by the Toyota Motor Corporation (TMC) to support the development of a more mobile society in which everyone can move freely. The

Foundation underscores TMC's on-going commitment to continuous improvement and respect for people. It utilizes Toyota's expertise and technologies to support strong mobility systems while eliminating disparities in mobility. TMF works in partnership with universities, governments, non-profits, research institutions and other organizations, creating programs are aligned with the UN Sustainable Development Goals (SDGs) to address mobility issues around the world.

Moving forward, the Toyota Group will continue to utilize the technologies and know-how it has cultivated through its business activities as well as through collaboration with various partners, to promote activities in line with the concept of the SDGs (Sustainable Development Goals) set by the United Nations. Overall, the Toyota Group aims to contribute to building a society where all individuals and communities can live joyfully and prosperously.

SDG Targets related to the activity featured in this article:



Media Contacts:

For more information, please contact:

Toyota Mobility Foundation

E-mail: info@toyota-mf.org