空間數據共享平台
Common Spatial Data Infrastructure

Thematic Topic: HKeMobility

To cope with the hustle and bustle of an international city's life, figuring out a convenient route for travelling from place to place with just a few touch of your mobile definitely can save much time. Therefore, route searching / pre-trip planning apps development is one of the crucial elements contributing to smart city development.

In this issue, we will get to know how geospatial data can help road users to plan their journeys with apps developed by the Transport Department (TD).

With the continuous development of transport infrastructure over the years, Hong Kong possesses a busy yet highly efficient transport system. The system handles about 13 million public transport (PT) passenger journeys everyday accounting for about 90% of the total passenger trips. To cope with the continuous growth in traffic and transport demands in such a densely-populated city like Hong Kong, smart mobility solutions play a pivotal role in the city's integrated transport system.

TD launched the HKeMobility in 2018 and has been providing an all-in-one traffic and transport mobile application and releasing a wide range of traffic data, and has all along been encouraging private sectors to open up traffic-related data to facilitate smart city development. In March 2021, the TD repackaged the available data from a user perspective and launched a new version of "HKeMobility", with a brand new user interface, providing personalised traffic and public transport information. Let's discover more about it via a chat between Common Spatial Data Infrastructure (CSDI) Ambassador "GeoFun" and Transport Hero "Agent-T".

Q1: What made it so special about the latest version of HKeMobility launched last year?

GeoFun

A1: It's an all-in-one mobile application integrating TD's three previous mobile applications ("HKeTransport", "HKeRouting" and "eTraffic News") providing a wide range of traffic data from the TD and private sectors.

Agent-T

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A1 (con't): With an enhanced user interface, it facilitates users to personalise the information to be received and achieves a faster and more convenient search for routes of different transportation modes, journey times and fares, and disseminates real-time traffic news to enable users to plan for the most appropriate travel arrangements.

Agent-T

Q2: Great! Being the CSDI Ambassador, I am particularly interested to know which functions are embedded with spatial information. May I have your advice?

GeoFun

A2: The TD has recently completed various smart transport infrastructures which enable HKeMobility to provide a wide range of spatially friendly traffic and transport information, including the real-time traffic conditions, driving routes, parking vacancy information, walking routes, PT routes and the estimated time of arrival ("ETA") of major PT services.
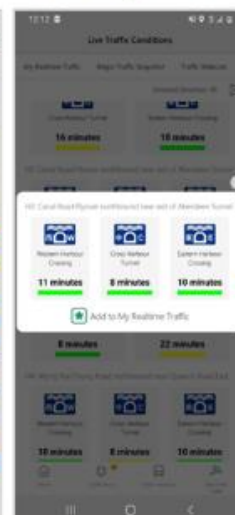

Real-Time Traffic Info

Detector & Snapshot | Route Search | Traffic Speed Map | Journey Time | Speed Map Panel
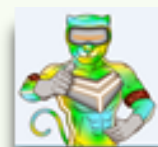
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A2 (con't): <u>Real-time traffic information</u>

After the substantial completion of detectors along the strategic routes and major roads in Hong Kong in 2020, the collection and dissemination of real-time traffic speed/volume data, traffic snapshot images and estimated journey time have been made automatic. This not only reveals the real-time traffic conditions of our strategic road network but also allows HKeMobility to advise users on route choices with the shortest travelling time or shortest path. By the end of 2022, traffic snapshot images with CCTV camera locations will be available every 2 minutes by direct download or through the Application Programme Interface on the CSDI portal.
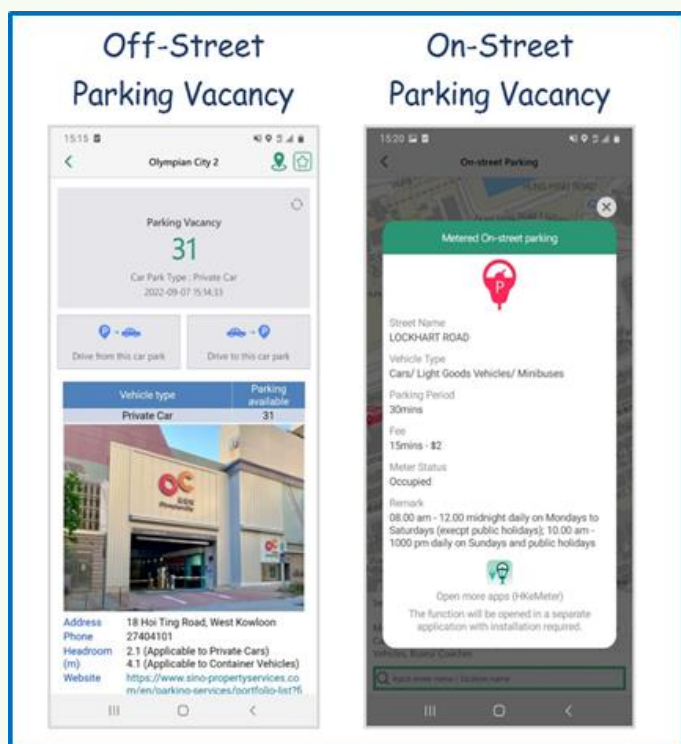
Agent-T

A2 (con't): <u>Parking vacancy information</u>

Parking vacancy is another piece of very helpful and highly demanded information. This information helps drivers look for vacant parking spaces and at the same time helps alleviate local traffic congestion by obviating the need for cars to circulate on roads.

A2 (con't): <u>Carpark vacancy</u>

The TD has been encouraging government departments and private developers to make their parking vacancy information available at HKeMobility and data.gov.hk. Real-time parking vacancy information for all car parks under TD's management has been released since mid-2019. As at the end-June 2022, about 80% of car parks managed by government departments are releasing parking vacancy information via HKeMobility and data.gov.hk, and will also be available on the CSDI portal by end-2022.
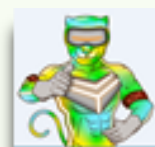
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Off-Street Parking Vacancy   On-Street Parking Vacancy

A2 (con't): On-street Parking

All on-street parking meters have been replaced with new generation parking meters. There are about 10,300 new generation of parking meters in operation. The new parking meters support payment of parking fees via multiple means and allow remote payment of fees for up to twice the longest parking period through the new "HKeMeter" mobile application.

Agent-T

A2 (con't):

The new parking meters are also equipped with sensors to provide real-time vacancy information. By end-2022, distribution of metered parking spaces and occupancy of those installed with new parking meters will also be available at the CSDI portal with updating frequency of every 1 minute.

As at the end-June 2022, HKeMobility has released parking vacancy information on more than 18,900 and 82,500 on-street and off-street parking spaces respectively, which account for about 48% of the total hourly parking spaces in Hong Kong on a single platform.

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Q3: As you mentioned real-time traffic conditions just now, why real-time traffic data is crucial to the commuters?

GeoFun

A3: Among all smart mobility initiatives, the collection, dissemination and application of real-time traffic data are indispensable for assisting the TD in planning, managing and operating the transport system. These initiatives also enable commuters to make informed decisions in planning their trips effectively and efficiently.

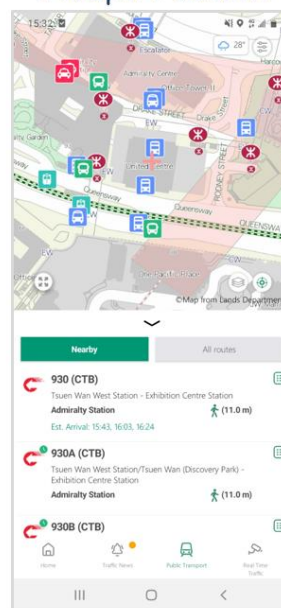**Q4:** In your opinion, for the pedestrians, how can spatial data help in "Route Search"?

Agent-T

A4: By making use of the Lands Department's 3D pedestrian network dataset released at Hong Kong GeoData Store (geodata.gov.hk) (alpha version of the CSDI portal) in December 2020, the TD has launched a walking route search function covering all built-up areas in Hong Kong at HKeMobility. The walking route search function also provides route options for persons with visual or mobility impairments. The 3D pedestrian network dataset will also be available in CSDI portal.
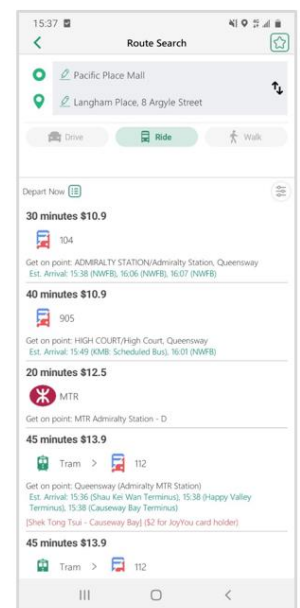
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Q5: In addition to pedestrians, how can HKeMobility be helpful to passengers?

A5: On the PT side, all franchised bus companies have released their ETA data at data.gov.hk since March 2021. The MTRCL has released the ETA of their five railway lines, LRT and MTR buses at data.gov.hk. Besides, the TD is developing a system to disseminate the ETA of green minibuses ("GMBs") by phases for completion by 2022.

Multi-mode Public Transport Route Search

Multi-mode Public Transport Search

Search Results

A5 (con't): As at the end-June of 2022, 453 GMB routes are equipped with the system to disseminate their ETA data. With a combination of other PT-related data, commuters could not only access the ETA data easily but also choose various public transport modes conveniently in terms of the shortest travelling time, the least number of interchanges, and the lowest fare via HKeMobility.

Agent-T

GeoFun

Q6: It seems there are many spatial data related to transportation. How many datasets related to traffic have been released so far?

A6: As at June 2022, TD has released 34 datasets at data.gov.hk. Other than that, the private sectors have also opened up traffic-related data to facilitate smart mobility development. Moreover, at as August 2022, TD has released 17 datasets at the Hong Kong GeoData Store. By end-2022, TD will release 25 datasets on the CSDI portal and then release other datasets progressively.

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Q7: Last but not least, is there any green advice in HKeMobility which will contribute to sustainability in Hong Kong?

GeoFun

Agent-T

A7: HKeMobility's walking route search function provides another option for users to reach the destination, which could encourage the public to choose walking instead of taking public transport. Moreover, the pedestrian road network will be updated by end 2022 to incorporate LandsD's hiking trail information. The TD also launched the Cycling Route Service in April 2022 covering all cycle tracks and bicycle parking sites in Hong Kong.

Latest activities of GeoLab

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Talks and Workshops

During the school summer break in August, a STEM Parent-child Workshop "Create an Interactive Web Mapping Application" was held for Primary 5 to Secondary 2 students and/or their parents. Both parents and children could participate and explore various spatial data together by designing a local tour with map. This workshop is aimed to facilitate students to stimulate creativity, develop information technology and mapping skills.

GeoLab provided a Feature Talk "Aviation and our relation with Spatial Data" which explored how spatial data can be applied in flight operation, flight simulation and aviation development in future in August 2022.

To arouse public awareness and application of spatial data which is closely related to our daily lives and discover the breadth and depth of different topics, GeoLab introduced the theme of "Environment and Health" with various activities to the general public in July and September 2022:

- Talk: GIS in Public Health Management and Practice
- Talk: Environmental Management - Remote Sensing Perspective
- Workshop: Disease Mapping and Environmental Monitoring

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The participants would discover how multiple sources of spatial data for location-based analysis to support healthcare planning and public health decision-making from talk to hands-on experience via public health mapping and environmental risk assessment.

Highlights of the activities

2022 Open GIS Competition

After six months of hard work from the participants of the "2022 Open GIS Competition" organised by GeoLab, the competition finally came to a conclusion in July 2022. Staunch support was received from the participants among 4 categories, from primary school students to the general public. Through the use of geospatial techniques, such as GIS modelling, cartography and spatial analysis, participants developed a map-centric web map showing events or phenomena in Hong Kong.

The shortlisted participants were invited to the final round presenting their works at the Presentation Day & Prize Award Ceremony on 30 July 2022.

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You may view the list of awards and the highlights of the competition at https://csdigeolab.gov.hk/en/event-highlight/2022-open-gis-competition-prize-award-ceremony .

Geospatial App Development Hackathon 2022

The Geospatial App Development Hackathon 2022, which was jointly organised by the Geospatial Lab and Hong Kong Institute of Vocational Education (Lee Wai Lee) was completed in July, with 30 participants taking part into it. They came from different tertiary institutions, explored and learned spatial data, GIS, programming, and analytical tools, then developed geospatial applications for addressing real-life daily concerns (such as grocery shopping guide, choosing secondary schools, pet the pet, hygiene and nuisance reporting for public housing, finding a gym, finding barrier-free routes to accessing amenities in Kwun Tong) in form of 6 groups. The event highlight is available at https://csdigeolab.gov.hk/en/event-highlight/hackathon-2022.

Visits to GeoLab

On 24 August 2022, Dr CHOI Yuk-lin, Secretary for Education, visited GeoLab with school principals and listened to the presentations of the works by the awardees of the 2022 Open GIS Competition and other students. On 14 September 2022 and 20 September 2022, Prof. Dong SUN, Secretary for Innovation, Technology and Industry, and Ms Bernadette Linn, Secretary for Development visited the GeoLab respectively. They appreciated the showcases demonstrated the importance of spatial data and analysis at the GeoLab (https://csdigeolab.gov.hk/en/events/event-highlight).

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Please visit https://csdigeolab.gov.hk/en/ to grasp GeoLab's latest news and details of all types of activities.

Major events related to CSDI

In July 2022, the Lands Department ran a booth at Hall 1 during Hong Kong Book Fair 2022 at the Hong Kong Convention and Exhibition Centre to showcase its services including the Common Spatial Data Infrastructure.

To celebrate the 25th anniversary of the establishment of the Hong Kong Special Administrative Region, the exhibition "Envisioning Beyond Legacy", jointly presented by the Development Bureau and the Planning Department, is open to the public from 6 July until 30 November at City Gallery and the adjoining Edinburgh Place in Central.

Interactive display of Common Spatial Data Infrastructure and Geospatial Lab is available at the exhibition.   For more information about the exhibition, please visit City Gallery's website (www.citygallery.gov.hk).