

Preferred citation style for this presentation

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How to improve public transport services in Jurong Lake District? Tech Showcase @ JLD CFC Networking Event

Future Cities Laboratory
Singapore ETH Centre
Singapore

7th May 2013

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SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN
Established in collaboration with MIT

Real time public transport routing?



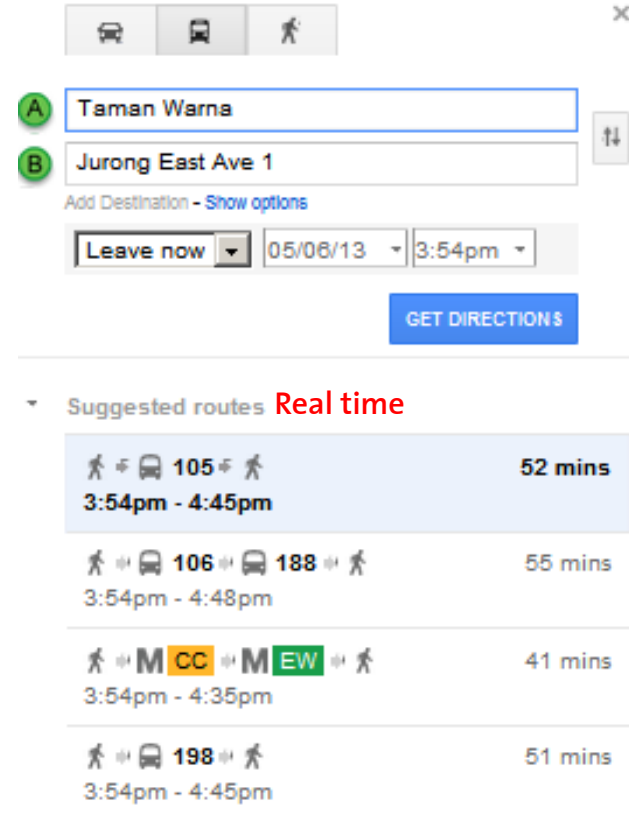
Should I go to

- bus stop a)
- bus stop b)
- Or MRT directly?

Equally important for transfers!

Challenges:

- Accuracy of bus position
- Update interval
- Data platform does not allow real time routing



Real time public transport routing – with 3d city model?

The screenshot shows a web-based map application for EPFL. The browser address bar shows 'map.epfl.ch'. The navigation bar includes 'YOU ARE', 'BY SCHOOL', and 'ABOUT EPFL'. A search bar is set to 'Place' with 'EPFL Web' selected. The main map area displays a 3D city model with a red dashed line indicating a route between points A and B. The route starts at 'BCH 1120' and ends at 'Arrêts M1 EPFL'. A sidebar on the left provides a detailed list of steps for the route, including distances and directions. The map includes various building labels like GC A, GC B, GC C, etc., and street names like 'Route de la Sorge'. A 'Floors' vertical scale is visible on the left side of the map area. The bottom of the page contains copyright information for EPFL and OpenStreetMap contributors.

map.epfl.ch

EPFL
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

YOU ARE
BY SCHOOL
ABOUT EPFL

Person Place EPFL Web
Find a place

English Français

Search Points of Interest Routing Print Measure Reset Link Help

A BCH 1120
B Arrêts M1 EPFL
Disabled
Let's go! Reset

A Departure from level 1
1 Down the stairs to level 0 66 m
2 Up the stairs to level 2 218 m
3 Up the stairs to level 2 236 m
4 Down the stairs to level 1 530 m
5 Down the stairs to level 0 575 m
B Arrival at level 908 m

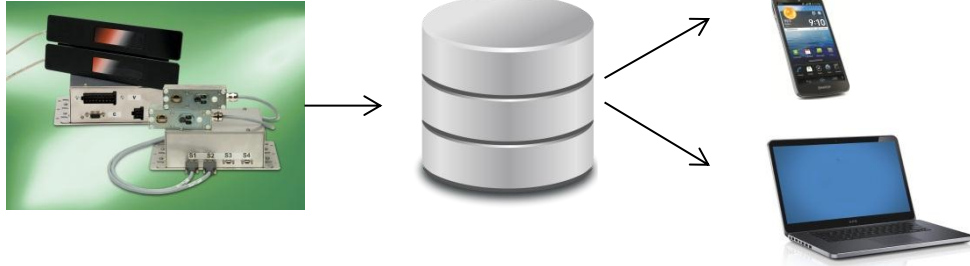
Floors
+8
+7
+6
+5
+4
+3
+2
+1
0
-1
-2
-3
-4

Zoom
+
-
View
3D Street View
Map Satellite

Places
EPFL Campus
IMT Neuchâtel
ECAL Rens
Aula Cour
Middle East
Basel
CHUV
Mallefer

webmaster.map@epfl.ch
© 2002-2010 EPFL © OpenStreetMap contributors

What is needed?

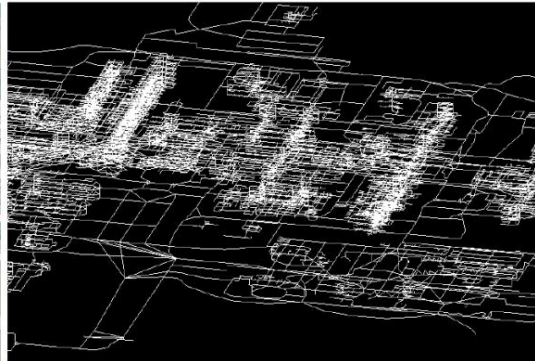


On board computers:

- Multi-sensor positioning system
- Continuous update of position through GSM/3G/4G

Common data platform, e.g. GTFS-realtime, -> publicly accessible datafeed

3d transport network



What else can be done?

Display of real time arrival times



In public space, e.g. shopping centre



In vehicle to facilitate smooth transfers

What brings the future? Open source sensor data platform

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CloudThink allows you to safely and privately use your driving data in many applications. [View Presentation](#)

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Applications Available 

SignUp NOW! 

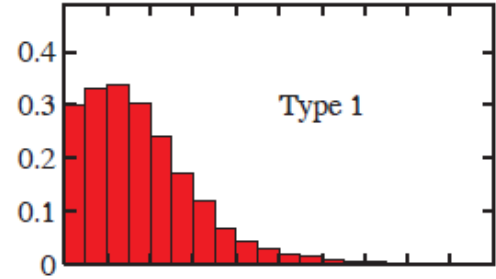
featured app



Improving bus operations? Boarding and alighting process



Type (1)

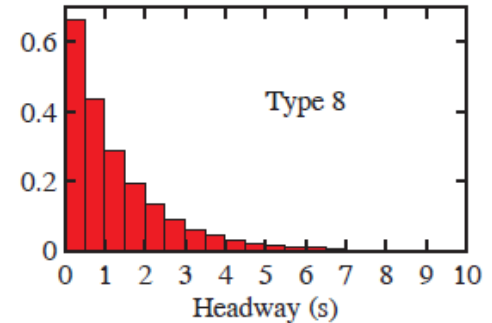


Off bus readers:
->faster boarding/alighting

+1 door:
->1.86 x faster alighting



Type (8)

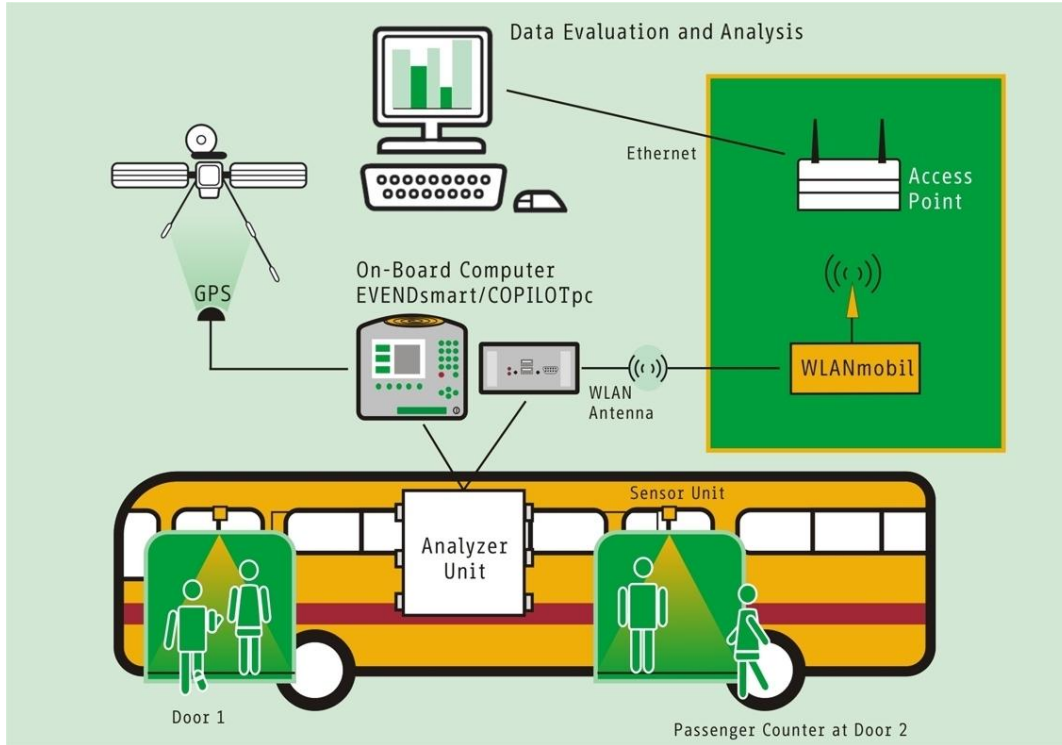


Improving bus operations? Dynamic bus bay allocation, also to gain space



Serv	Destination	Stand	Time
620	Wheathampstead, St	13	14:49
621	Watford, Clarendon	5	14:49
300	Stevenage, Bus Stn	1	14:52
84	New Barnet Rail Stn	2	14:53
658	Borehamwood, Ripon	2	14:54
S4	Cottonmill		
S8	Marshalswick		
S2			

What is needed?



- Sensors for passenger counting:
- Real time information about on board passengers (even if they are students)
 - Evaluation of time gains
 - Relevance of fare dodging

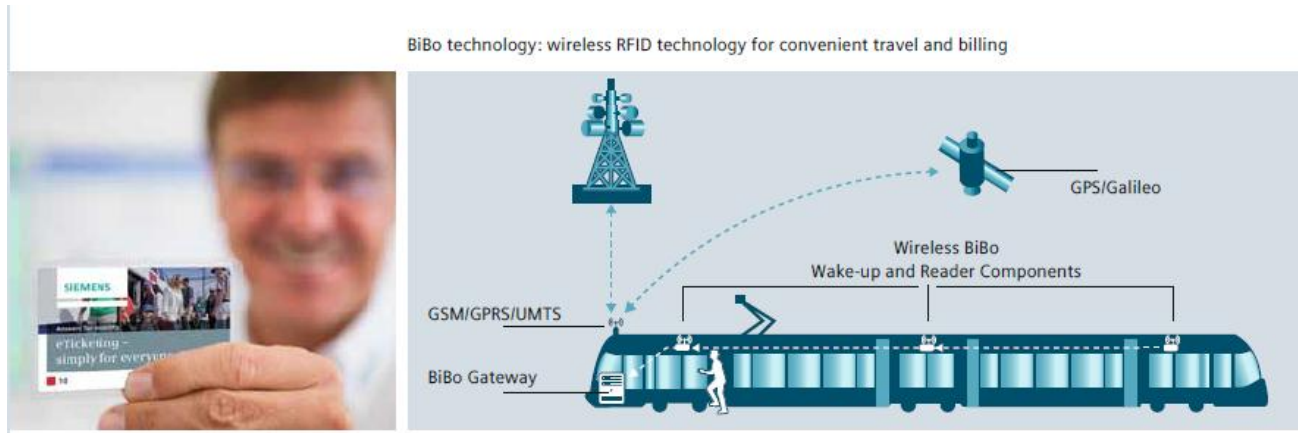
- Real-time operation control system
- Real time allocation of bus bays
 - Communication to driver and passenger

What brings the future?

Bus Services Enhancement Programme

- 800 new buses
- 40 new services
- What combination of fare collection and bus type is most effective? And for which bus stops and bus line?

Future of fare collection technology: Be In – Be Out



MATSim for evaluation of benefits if rolled out for entire Singapore

