

# INVITATION TO SEMINAR

## A Real-time Cycling Surveillance and Management System Using Smart Phones

### Date

Wednesday 23 February 2011

### Time

12.00pm - 2.30pm

### Venue

RMIT University, Multifunction Room  
13.3.7 (Building 13, Level 3, Rm 7) Emily  
McPherson Building, City Campus, Russell  
and Victoria Streets Corner

### RSVP

Tel 03 992 54324  
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### About the presentation

Dr ChihChing Li from the National Cheng Kung University of Taiwan will present a seminar on the topic of "A Real-time Cycling Surveillance and Management System Using Smart Phones".

A real-time cycling surveillance and management system, GPS i-Tracing System, was developed about two years ago. The GPS i-Tracing system is a GPS-based tracking system for the Cycling Life-Style Foundation in Taiwan. It is designed to track the cycling user's real time position and record the cycling path for the certificate. Positioning information is acquired from GPS measurements and the data will be transferred to the central server by the 3G/GPRS mobile communication. The cycling user's positioning data will then be stored in a database server, and displayed on a GIS-based surveillance monitor.

These days, most smart phones are embedded with not only 3G communication module but also low-cost sensors including a GPS receiver, an accelerometer, a compass and gyroscopes.

An advanced real-time cycling surveillance and management system is developed, which is integrated with smart phones, mobile communication, internet, database and GIS. The positioning techniques of the system are not only GPS but also mobile phone positioning. A smart phone acts as a client device to obtain a cyclist's surveillance data and transmit it to a database server via a mobile communication and internet. The surveillance data including location, altitude, speed, acceleration, heading

and time stamp are then stored in the database server, displayed on a GIS-based surveillance monitor and used for path certificate, calorie calculation and training analysis. By using a web server or a web-based GIS system (e.g. Google map), the rider's position and track can be shown to family and friends in the web browser in real time.

### About the presenter

Dr ChihChing (Alias ) Li was awarded the Australian 2010 Endeavour Research Fellowship and holds a PhD in Aeronautics and Astronautics from the National Cheng Kung University of Taiwan.

He has worked as a post-doctoral researcher for five years in the same university. Dr Li has been actively working on GPS-related application research for over 10 years and on a number of projects funded by both governments and industries. His main research interests are Unmanned Aerial Vehicle, GPS applications, mobile communication and system integration.

Further information can be obtained from the PTRI website [www.rmit.edu.au/research/institutes/platformtechnologies](http://www.rmit.edu.au/research/institutes/platformtechnologies)

or from Professor Kefei Zhang, RMIT SPACE Research Centre Satellite Positioning and Navigation (SPAN) Lab

The Center for Satellite Positioning and Navigation (SPAN)

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