

Dynamic Vehicle Tracking Scheduling & Fleet Management

动态车辆跟踪，调度和车队优化管理

The Seminar

Q&A in English and Chinese(中英作答)
Special Focus on Bus Operations & Fleet Management

Presentations by StarG3 Technologies and SIMTech, Nanyang Technological University
Hosted by the Chartered Institute of Logistics and Transport
由 CILT, StarG3, SIMTech, NTU 主办

Date:	8 June 2009, Monday
Time:	6.00 pm to 8.30 pm, with light refreshments served
Venue:	CILT Singapore, 5 Jalan Kilang Barat, #06-03 Petro Centre, Singapore 159349
Fee:	\$10 (Individual/Corporate Member) \$15 (Non-Member)

Managing a private or dedicated fleet can be a challenge. You have to operate efficiently and provide good customer service while dealing with driver turnover and rising costs. If you're not careful, fleet assets can quickly become liabilities. The fleet management software you put in place should make life easier, not more difficult.

Vehicle routing and scheduling has received much attention from both the scientific community and also from the industry during the last decade as it plays a vital role in transportation and distribution systems. Due to advances in ICT (Information Telecommunications Technologies), it has given rise to the development of solutions to dynamic vehicle routing problems (DVRP), also referred to as on-line vehicle routing problems.

These systems now allow real-time information from satellites to be captured and processed for tracking vehicles and to manage vehicle fleets. The routing systems, combined with a vehicle tracking system and a digital map of the road network, constitute essential information to provide location, delivery and collection, and driver behaviour patterns for users. For distribution companies and fleet operators, these advanced systems would do away with manual processes to plan the operations of their vehicle fleets or to upgrade existing systems. It would also enable them to meet challenges on time critical demand and uncertainties.

OBJECTIVES OF THE TALK:

- Help transport and logistics operators to gain an understanding of, and move towards the use of dynamic vehicle routing and scheduling systems with available vehicle tracking information based on GPS/GIS systems.
- Leverage on systems to put in place a fleet management system to enable real-time remote tracking and monitoring of vehicles, to streamline processes and to optimize fleets of buses, delivery trucks, emergence response vehicles, heavy-lift and other specialized vehicles.
- Through **case studies** of vehicle routing and fleet management, gain a better understanding of how such a system will reduce the high costs of operations, resource utilization, and vehicle ownership.
- Through **demonstrations**, understand how the software system allows orders to be automatically allocated to trucks and the route of each truck is automatically optimized to minimize cost in terms of distance, time and more responsive customer service.
- The demo will also showcase the mashup of real-time information such as traffic alerts from LTA EMAS system in the tracking module.



6.00 p.m.	Registration 登记	
6.30 p.m.	Welcome and Opening Remarks, CILTS 致欢迎词	Dr Chia Lin Sien Advisor, CILTS 谢麟先博士
6.35 p.m.	Dynamic Vehicle Routing and Scheduling Based on GPS/GIS Tracking and Optimization 基于GPS/GIS跟踪技术和优化技术的动态车辆路线安排和调度 The advances in ICT (Information Telecommunications Technologies) has given rise to the development of solutions to dynamic vehicle routing problems (DVRP), also referred to as on-line vehicle routing problems. These systems now allow real-time information from satellites to be captured and processed for tracking vehicles and to manage vehicle fleets. The routing systems combined with a vehicle tracking system and a digital map of the road network, constitute essential information to provide location, delivery and collection, and driver behaviour patterns for customers. For distribution companies and fleet operators, these advanced systems would do away with manual processes to plan the operations of their vehicle fleets. It would also enable them to meet challenges on time critical demand and uncertainties. This talk is intended to help transport and logistics companies to gain an understanding of, and move towards the use of dynamic vehicle routing and scheduling systems with available vehicle tracking information based on GPS/GIS systems. Through case studies of vehicle routing and fleet management, know the benefits, and associated costs. Emphasis will be given to how such a system will reduce the high costs of operations, resource utilization, and vehicle ownership.	Dr Li Zhengping 李正平博士
6.55 p.m.	Demo of Dynamic Vehicle Tracking and Scheduling 动态调度系统演示 A demonstration of an order allocation and vehicle route optimization and tracking prototype software system developed at NTU. The software system allows orders to be automatically allocated to trucks and the route of each truck is automatically optimized to minimize cost in terms of distance and time. The demo will also showcase the mashup of real-time information such as traffic alert from LTA EMAS system in the tracking module.	Dr Malcolm Low Yoke Hean 刘育贤博士
7.10 p.m.	Vehicle Tracking Systems and Applications for Buses 车辆跟踪技术在巴士管理中的应用 While vehicle tracking systems can be used profitably for a wide range of vehicles, both land and water, the focus is mainly on the use of a vehicle tracking system on buses and related for-hire vehicles more generally. We will first consider the development of vehicle tracking systems (VTS) using global positioning system (GPS) satellites and the commonly available mobile phone communications technology. These systems enable real-time remote tracking and monitoring vehicles, and the captured data are then deployed to plan trips, respond to real-time demands from consumers and monitor the traffic condition and driver behaviour. These systems are an integral part of all modern fleet management systems and play a vital role in planning and optimization of fleets of buses for scheduled and for-hire operations. The following demonstration is to show how scheduled buses can be controlled to meet strict requirements for the public. A demonstration on the operation of and how for-hire buses used for ferrying school children, workers and other tasks can benefit from the deployment of VTS.	Dr Chia Lin Sien 谢麟先博士
7.30 p.m.	Demonstration of Use of StarG3 VTS in Buses StarG3 VTS跟踪系统演示 (在巴士管理上的应用) A showcase of the capabilities and efficacy of the company's vehicle tracking system and will give an account of the following users of the StarG3 system – Public Works Department (maintenance vehicle fleet), National Environmental Agency (boat fleet), SAF (armoured vehicle fleets), and YLF Mfg (delivery vehicle fleet) as well as projects in Thailand, Malaysia and further afield.	Mr Wilson Chua Management staff of StarG3 Technologies
7.40 p.m.	Question and Answer Session (Both English and Chinese) 问答 (中英作答)	All Speakers
8.00 p.m.	Refreshments and Networking Session 交流与茶点享用	
8.30 p.m.	End 结束	

The Speakers 演讲者

Dr Chia Lin Sien 谢麟先博士 (PhD, FCIT) is Project Director, StarG3 Technologies. He retired from NUS in 2001 and thereafter served as Visiting Professor in Waseda University and Soka University in Tokyo for a period of two years. He specializes in maritime transport as part of his broader interest in maritime affairs. He is a member of the Advisory Board of CILT and the Singapore National Shippers' Council (SNSC).

Mr Wilson Chua, management staff of StarG3 Technologies

Dr Li Zhengping 李正平博士, Ph.D. in Supply Chain Management (Nanyang Technological Univ., 2001), is Senior Research Engineer with SIMTech. Dr Li has many years of consultancy and research experience in supply chain management, logistics planning, production planning, operations management, and agency technology. Since 1992, he has worked in industry and research organisations as senior consultant/researcher and planning engineer.

Dr Malcolm Low Yoke Hean 刘育贤博士 is Assistant Professor in the School of Computer Engineering, Nanyang Technological University (NTU), Singapore. He received his Bachelor and Master of Applied Science in Computer Engineering from NTU in 1997 and 1999, respectively. He was awarded a Gintic (now SIMTech) postgraduate scholarship in 1999. In 2002, he received his D.Phil. degree in Computer Science from Oxford University. His current research interest is in the application of parallel and distributed computing for the modeling, simulation, and optimization of complex systems.

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The Reply Slip 回复

(to be submitted by 1 June 2009)

Please fax or email the attached Reply Form confirming your attendance by 1 June 2009. Please ensure registration form is accompanied by cheque payment of \$10 (members) or \$15 (non-members) made payable to "Chartered Institute of Logistics & Transport".

Please do not hesitate to contact the CILTS Secretariat if we can be of any assistance.

Our contact details:

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