VEHICLE ROUTING PROBLEM: MODELS AND SOLUTIONS
(Masalah Perjalanan Kendaraan: Model dan Penyelesaian)

LIONG CHOONG YEUN1, WAN ROSMANIRA ISMAIL1, KHAIRUDDIN OMAR2 & MOURAD ZIROUR1

ABSTRACT
The Vehicle Routing Problem (VRP) is a well known problem in operational research where customers of known demands are supplied by one or several depots. The objective is to find a set of delivery routes satisfying some requirements or constraints and giving minimal total cost. The VRP has drawn enormous interests from many researchers during the last decades because of its vital role in planning of distribution systems and logistics in many sectors such as garbage collection, mail delivery, snow ploughing and task sequencing. The VRP is divided into many types. The important problems are VRP with Time Windows, VRP with Pick-Up and Delivery and Capacitated VRP. Recently many exact methods have been used to solve the VRP such as exact algorithms based on linear programming techniques and guided local search. Besides that, heuristic techniques have received wide interests in researchers’ effort to solve large scale VRPs. Among the recently applied heuristic techniques are genetic algorithm, evolution strategies and neural networks.

Keywords: Vehicle routing problem; VRP with time windows; VRP with pick-up and delivery; capacitated VRP; exact algorithms; heuristic methods

ABSTRAK

Kata kunci: Masalah perjalanan kenderaan; MPK dengan tetingkap masa; MPK dengan pengambilan dan penghantaran; MPK dengan kapasiti; kaedah tepat; kaedah heuristik

References
Vehicle routing problem: Models and solutions


---

1 *Pusat Pengajian Sains Matematik, Fakulti Sains dan Teknologi,* Universiti Kebangsaan Malaysia 43600 UKM Bangi Selangor D.E. MALAYSIA

E-mail: lg@ukm.my*, wrismail@ukm.my, ko@ftsm.ukm.my & zirour@yahoo.fr

---

* Corresponding author