Vehicle Routing in Practice

Geir Hasle

SINTEF ICT, P.O. Box 124 Blindern, NO-0314 Oslo, Norway. Email: Geir.Hasle@sintef.no

Abstract The VRP is an NP-hard problem that comes in many guises. Solving variants of the Vehicle Routing Problem (VRP) is a key to efficiency in transportation and supply chain management. The VRP literature contains thousands of papers, and VRP research is regarded as one of the great successes of OR. Vehicle routing decision support tools provide substantial savings in society every day, and an industry of routing tool vendors has emerged. Yet, a large part of VRP research is based on idealized models. One may question its industrial relevance. Exact methods of today cannot consistently solve VRP instances with more than 50-100 customers in reasonable time, which is generally a small number in real-life applications. For industrial problem sizes, and if one aims at solving a variety of VRP variants, approximation methods is the only viable approach. There is still a need for VRP research, particularly for large-scale instances and complex, rich VRP variants. How far can we go, and what are the promising research avenues?