Solving Real-World Vehicle Scheduling and Routing Problems

Jens Gottlieb

SAP AG
Dietmar-Hopp-Allee 16
69190 Walldorf
Germany
jens.gottlieb@sap.com

The classical capacitated vehicle routing problem forms the core of many real-world applications, e.g. in transportation management systems. However, real-world scenarios are typically more complex since they involve multiple objective functions, many constraints and decisions to be made. We sketch the most important features of the *vehicle scheduling and routing problem* (VSRP), for which an optimization algorithm is offered in SAP's supply chain management solution, a commercial software that allows to plan and optimize the whole supply chain. The VSRP is used by our customers to model and solve their vehicle scheduling scenarios. Each customer's transportation business has special requirements that are mapped into a certain family of VSRP instances sharing structural similarities. As scenarios of different customers may differ significantly, the VSRP covers a heterogeneous set of instances. We present an outline for our solution algorithm and give an overview of selected real-world VSRP scenarios from SAP's customer base.