Inventory Routing Optimization for Bulk Gas Transportation

Thierry Benoist, Bouygues e-lab, Paris, France.
Bertrand Estellon, Laboratoire d'Informatique Fondamentale, Marseille, France.
Frédéric Gardi, Bouygues e-lab, Paris, France.
Sachin Jain, American Air Liquide Holdings, Newark, US-DE.
Antoine Jeanjean, Bouygues e-lab, Paris, France.
Emmanuelle Patay, Air Liquide, Jouy-en-Josas, France.

{tbenoist, fgardi, ajeanjean}@bouygues.com
bertrand.estellon@lif.univ-mrs.fr
{sachin.jain, emmanuelle.patay}@airliquide.com

Abstract

Inventory Routing is a generalization of Vehicle Routing with vendor managed inventory replenishment. We describe a local search algorithm designed for a real life model of this problem. Based on small neighbourhoods with highly optimized underlying routines, this software is operational in North America and makes it possible to envision an important reduction of Air Liquide delivery costs and carbon footprint.