Abstract

Route planning system could be used as a part of supply chain management information system or as a complete application. The main challenge in route planning system is directing vehicles to their destination in a dynamic traffic situation, with the aim of reducing travel times and enabling the efficient use of the available road capacity in the road transportation network for the supply chain management (SCM). To solve the problem of directing vehicles to their destination in a dynamic SCM situation a fast route planning method is an effective approach. To address this problem the researcher proposes a multi-agent system (MAS) approach. MAS were enabled vehicle drivers to respond quickly and confidently to changes in the condition of the dynamic environment. The study introduces a number of algorithms for solving route-planning problem across the supply chain, including: prediction of travel time, planning, and dynamic route choice adjustments. The algorithms are based on MAS and the local road transportation network information. The main contribution of the research is to provide a new approach to solve the route planning problems in the underlying SCM, because the agent uses the information that it has learned to help in finding the optimal path.