

Abstract

Transportation System and Method for passenger and route scheduling

The present application relates to a transportation and routing system. Specifically, the present application relates to scheduling and routing of passengers in particular in a multi-stop scenario. Accordingly, there is provided a computer-implemented method for route calculation in a multi-vehicle environment, comprising the steps of a) receiving booking data corresponding to a desired trip of a user, b) determining at least one first route data as current route data corresponding to the booking data, wherein each of the at least one first route data comprises at least one first route characteristic, c) determining at least one subsequent route data corresponding to the booking data and being based on the current route data, wherein each of the at least one subsequent route data comprises at least one subsequent route characteristic, and wherein a route characteristic is indicative of at least a quality of the respective route data, d) comparing the at least one subsequent route characteristic with the at least one route characteristic of the current route data, e) determining, based on the comparison, whether a quality of the at least one subsequent route data is increased in relation to the at least one current route data, f) selecting one of the current route data and the subsequent route data having the higher quality as the subsequent route data employed as route data solution or for the next iteration, and g) transmitting the route data solution to at least one of a vehicle as a route solution and a user as a booking solution, wherein steps c) to f) are repeated until a defined exit condition is satisfied, wherein at least one of the at least one subsequent route data is determined by employing a metaheuristic function guiding a neighbourhood search function, wherein the neighbourhood search function is adapted to determine subsequent route data operating from the current route data, and wherein the search scope of the neighbourhood search function is set by a parameter of the metaheuristic function.

Figure 10