ABSTRACT SUBMISSION

Title: User-friendly intermodal routing

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Objectives

For many years mobility was mainly only multimodal. To reach a destination, which is too far away for walk, the car or public transport or bicycle is taken for the complete trip. Concepts like car sharing and park & ride were used only by a minority of traffic/ mobility participants. With progressing development of information technology, telematic services and especially with the vast dissemination of smartphones this changed rapidly during the last few years. Justified mobility and price models were developed and mobility participants can be much better informed about alternative routes as well as for using different traffic modes or knowing about possibilities for picking up a shared car to reach their destinations. In order to give users of a mobility information system the best alternatives for such intermodal routes, effective and quick algorithms are needed, which represents a challenging task.

Data and methodology

Routes, which are completely on the road network, are calculated very quickly with standard algorithms like Dijkstra and A*. The calculation of public transport routes considers departure and arrival times at transition points and is also very quick, because of the less extensive network. Calculating intermodal routes is much more complicated, because typically the two networks are connected at defined transition points and one has to calculate many combinations of road/ public transport sections to get the best route or a set of good alternatives. The algorithm presented in this contribution combines a road and a public transport routing solution using heuristics. Transition points are prioritized and the search domain is reduced appropriately. Furthermore, people often know approximately where they want to change means of transportation. This user's need is also incorporated into the algorithm, which is able to calculate routes on the basis of current traffic and daytime-typical situations.

Expected results

Based on the prioritized transition points and the approximated location, where the user wants to change the mean of transportation, an additional reduction of the search domain proceeds, so that the calculation of intermodal routes are performed within a few seconds. The result of the routing shows user-friendly, realistic, intermodal routes. The algorithm itself as well as the setup and integration in a mobility system will be presented for the area of Berlin, Germany.

Approval Confirm

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