

Remarks on Complex Navigation Systems^{*}

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Abstract. The goal of any navigation service is to find the path that will satisfy user needs as well as can be. Various traveling options may require different types of navigation. Combining two or more types of navigation can lead to a complex service, which can increase the efficiency and comfort of user's movement. The user and even the path can be characterized by a large number of variables. Moreover, the user interaction with the navigation can be limited, for example, by the necessity to follow the surrounding traffic.

One of the important factors for connection planning is the path reliability. Using detailed data from the connection provider, we can see how the characteristic features of public transport networks involve this path parameter.

Under the JRGPS project we have developed a prototype of navigation that combines walking routes with public transport. This approach opens several problems. We are trying to describe them and denote some solutions. The experience from JRGPS project have been summarized in [1].

Navigation is widespread especially in mobile devices, where the computation possibilities are limited. When the computation is not done remotely, the response can be longer than it is acceptable for some situations. We have therefore searched for methods that speed up the given calculation in the area of public transport networks. The approach, when the calculation is not performed on the original network but on the simplified one, seems to be very promising. The path found in the simplified network can be easily mapped to a corresponding path in the original network. The methods of public transport network reduction were introduced in [2].

References

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