

On Flow Consolidation Modelling in Urban Congested Areas

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Abstract : The challenging and continuously growing competition in the urban freight transport market emphasizes the need for optimal planning of transportation processes in terms of identifying the solution of consolidating traffic flows in congested urban areas. The aim of the present paper is to present the mathematical framework and propose a methodology of combining urban traffic flows between the distribution centers located at the boundary of a congested urban area. The three scenarios regarding traffic flow between consolidation centers that are taken into consideration in the paper are based on the same characteristics of traffic flows. The scenarios differ in terms of the accessibility of the four consolidation centers given by the infrastructure, the connections between them, and the possibility of consolidating traffic flows for one or multiple destinations. Also, synthetical indicators will allow us to compare the scenarios considered and chose the indicated for our distribution system.

Keywords : distribution system, single and multiple destinations, urban consolidation centers, traffic flow consolidation schemes

Conference Title : ICTTE 2021 : International Conference on Traffic and Transportation Engineering

Conference Location : Venice, Italy

Conference Dates : November 11-12, 2021