

Allocation of Mobile Units in an Urban Emergency Service System

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Abstract : In an urban area the allocation placement of an emergency service mobile units, such as ambulances, police patrol must be designed so as to achieve a prompt response to demand locations. In this paper, a partition of a given urban network into distinct sub-networks is performed such that; the vertices in each component are close and simultaneously the difference of the sums of the corresponding population in the sub-networks is almost uniform. The objective here is to position appropriately in each sub-network a mobile emergency unit in order to reduce the response time to the demands. A mathematical model in the framework of graph theory is developed. In order to clarify the corresponding method a relevant numerical example is presented on a small network.

Keywords : graph partition, emergency service, distances, location

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