Abstract

Vehicular networking has significant potential to enable many different applications related to traffic safety and traffic efficiency within Intelligent Transportation System. In this paper, cloud-based vehicular network architecture is proposed such that the vehicles can share computation resources, storage resources and bandwidth resources. The proposed architecture includes four types of cloud: a vehicular cloud, a roadside cloud, a cellular cloud and a central cloud. Then, a video capture service based on the proposed architecture is presented. Vehicular cloud is used to provide a video capture service of specific location, moving vehicle or route. It sends the captured video to a customer and the other available cloud to be used for further investigation. Resource allocation and management algorithms are proposed to handle the continuity of video capture with minimum service disruption. The proposed service is implemented using a test bed.

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