SDN Enabled Big Data Analytics and Framework for Sensor Data of Vehicle Health, Safety and Monitoring System

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ABSTRACT:

Vehicular network enabled vehicle health, safety and monitoring system is gaining attention for its potential application while software defined network (SDN) is supporting vehicular communication for designing core of the network. Vehicular network emits enormous amount of data where most of them are sensor data and that amount of data required to undergo analyzed for productive output. There are two types of sensor data are used in vehicular network, vehicle sensor data (VSD) and infrastructure sensor data (ISD). Flow based SDN controller examines every packet of the network which is responsible of engagement of resources gravely. For vehicular health monitoring and safety applications, SDN doesn't required to check and analyze ISD. In this paper, a framework is proposed that promises to ignore ISD and only consider VSD for vehicle health, safety and monitoring applications. With this connections, this paper proposes big data module along with SDN controller and inside the big data module, a partitioner program is designed. The partitioner program categorize VSD and ISD on the basis of certain parameters like data payload, technology used, packet header and restrict RSD to be processed by SDN controller. A combiner program is designed that bind both VSD and ISD to fed to the application plane of system. Additionally, a big data analytics for vehicle health, safety and monitoring application is derived.

KEYWORDS:

Big data, SDN, Vehicular Network, Framework

ACKNOWLEDGMENT