

The Big Data Aggregation through Auto MAT Platform

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ABSTRACT: The latest car models come up with services such as data connectivity, cloud storage, citizen empowerment, open market place and few more. But the ingress of automobile (vehicle) data is reserved, because of the difference in trademark. To overcome these brand barriers, an AutoMAT which is European project has implemented the provision of accessing of general data for the entire vehicle where it was not limited to a single trademark .This Paper is all about engineering of big data Marketplaces for vehicles to setup a sampling and breaking new ground data services for vehicles automation. Hence, this Unique prevalent automobile info standard described as a correlated and navigable data standards, collection of brand-independent data and common data sets are granted .This work aids in understanding the unique prevalent automobile and marketplace setup .The two major use-cases which are taken in account is i) Local weather prediction and ii) Measurements of road quality which are used to exhibit the AutoMAT concept and non-moving pattern applications.

KEY WORDS: *AutoMAT, Big data.*

I. INTRODUCTION

Thousands of signals are processed in the internal of a vehicle. Way back, vehicle sensor signal's purpose was designed only for safety and steering related driving tasks. Advance Driver Assistance System (ADAS) are endured in new aspects of commuter's safety and comfort functionality along with autonomous driving. There is a significant growth in number of installed sensors and complex signal processing components within vehicles. A lot of connected cars in Europe generate a vast possibility for applications and services authorized through in vehicle aggregated data. Currently, this crucial potential is still shielded since the automotive industry was unable to setup an open vehicle data based environment. Influenced by the mobile and smart phone industry. This paper proposes an exchange platform for vehicle sensor data in form of vehicle big data marketplace as qualifier for cross-sectorial services.

II. RELATED WORK

Johannes Pillman, et.al[1], worked on car-to-cloud communication , Even though the recent car models come up with the connectivity services, the probability of the automobiles for accomplishment of the mobile sensors in the Internet of Things (IoT) is not proportionate. The European AutoMAT project hence exemplified a spread-out model noted as unique prevalent automobile info standards in collaboration with Big-data cloud based marketplace and testy-industry. As a result of this the automobile sensor data will be a weighted data for development of brand new services by keeping the traffic-affiliated operations. This paper focuses on the forecasting of the feasible data standard and brings into play the experimental degree.

SoumyakantiDatta, el.at [2], worked on Integrating Connected Vehicle in IoT, IoT based platform and services are keeping automobiles as main source. The collaboration of connected vehicles Intelligent Transport System (ITS) with IoT technologies have the realm of possibility to developing an efficient and fast transportation system which will have future scope. This paper focuses on research and engineering challenges for integrating connected vehicles into IoT ecosystem.

Christoph Ide, et.al[3], worked on Client based control of correlation bounded by MTC and Human Data Traffic. The elaboration of cellular communication systems has been fixed up with the aid of MTC (Machine Type Communication) and Human-to-Human communication. This paper come up with a strategy which is termed as client-controlled channel-aware transmission (CAT) .This model manifests the CAT scheme and improves the QoS in Human-to-Human communication.

Oliver Traver, et.al[4], worked on the potential of collective perception in vehicular Ad-hoc Networks.In this paper , collective perception in vehicular ad-hoc networks describes the technology of publishing vehicles perceived by local perception sensors in addition to the self-announcement of V2X enabled vehicle.

III. PROPOSED SYSTEM

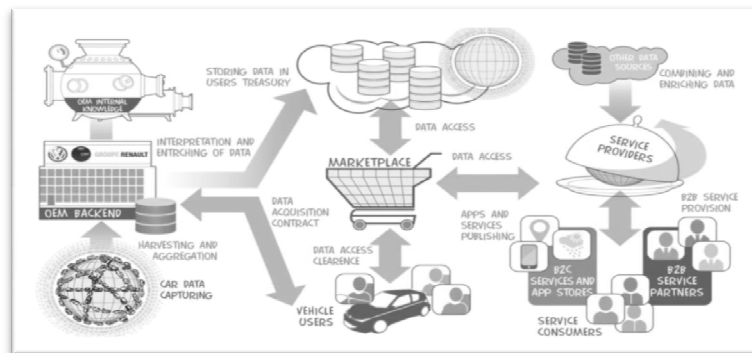


Fig. 3.1: Architecture of the Proposed System

The architecture of the proposed system as shown in Fig.3.1 can be split into various components organized around the central marketplace. Data accumulated in the interior of car is approved by vehicle owners, driver or commuter. Data in the car is documented as it moves, from various sensors which are installed in the car. Information encountered from the sensors are used for comfort functionality, advance driver assistance system and engine control. With the approach of advance communication technology in cars, vehicles can be licensed as rolling sensors to create major big data potentials. After the data has been extracted from the vehicle, it is transmitted to the OEM (Original equipment manufacturer) backend. Where, the raw data is enhanced and interpreted using OEM internal knowledge to convert dependent data to generic data. The OEM reconcile proprietary information and brings it into homogenized CVIM format.

Reconciliated and enriched data is stored enciphered inside the vehicle user's personal cloud storage depicted as storing data in user's treasury. The data in cloud storage is kept in individual and separate vaults for each vehicle user to accomplish supreme possible privacy protection by design. Hence, vehicle data in cloud follows perception of data access clearance: the creator and owner of data stay in full authority. Vehicle data is only granted and distributed on the vehicle big data marketplace, when the authorization is actively given. The marketplace plays a main role in the conferred architecture.

It serves as an exchange platform for vehicle data and accomplish the functions of a data accumulator and mediator between vehicle owner and service providers. In the present paper vehicle data from various sources centralise. On the source side, vehicle owner grants data. Arriving data needs to be pre-processed and indexed to allow availability study and searching. On the buyer side, service provider request data. They can search for the available data and filter them by quality or aged. The marketplace controls all offers and requests, accumulate data from individual user's cloud storage and merges it to vehicle big data from the fleet. In the final step of the pre-processing, service providers build innovatory applications such as local weather prediction, prediction of road quality which are based on vehicle big data. These applications in turn are offered to consumers and vehicle users.

IV. RESULTS

The experimental result from the proposed system is that it successfully stores all the data from the information created by automobile i.e., not only a particular brand or type of vehicle but it collects the data from every mold of the vehicles in a open data source and those data stored can be accessed by every individual at every time when the owner of the vehicle requires data about specific genre. If a person is driving in a route where he is unaware about that place at that time he can collect the information which would have been created and stored in the data store by other vehicle would have crossed the same route before. Hence the data store plays a prominent role in storing data helping the access to the needy.

V. CONCLUSION

This paper holds the concept of aggregating the vehicle data and this makes up the architecture of the system. The proposed system is helpful in accessing the data from the reservoir which is the big data Marketplace using the AutoMAT software. This is kept completely confidential where the registered person can access the data at any point of time. This unique prevalent nature of the system makes it a successful system. This has a better future scope where many other sort of data can be added up for betterment purpose.

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