2.1 Proposed System:

The propose system performs the automation of the work procedures that are carried out on the workfloor of the client location.

The system is capable of capturing the required information to perform the operations. To perform any operation initially there is a requirement of data with the help of which the operations can be performed.

The system will read the vehicle details once the vehicle is connected to the system.

The system will fetch the necessary information related to the vehicle. After that it will show the details and ask for verification by the user.

Once the user verifies the details the system will redirect the user to diagnosis operations list.

The list contains the diagnosis operations name that are performed in general on the vehicle. The diagnostic operations are classified in three different types:-

- **DTC diagnosis mode**:-

On selection of the DTC diagnosis mode by the user, the proposed ADT tool will retrieve DTCs from the ECUs and will send it to the analytics server. The analytics server will use the fault model to prioritize the DTCs and return the prioritized list to the ADT tool.

- **Symptom mode:-**

On selection of the symptom diagnosis mode by the technician, the proposed ADT tool will send the symptoms to the analytics server. The analytics server will use the fault model to find out the ranked components to be diagnosed and send the list to the ADT tool.

- **Function mode**:-

On selecting the function mode by the technician, the proposed ADT tool will show the specific functions to the technician which can be

performed on the analytical server.

Once the user performs all the operations the system displays a detailed summary report in the proper systematic format referred as Job Card.

The Job Card displays the detail analysis of the operations performed on the vehicle. This displayed information i.e job Card is once again confirmed by the user and the necessary operations that are supposed to perform are closed by the system.

This automates the entire process of the shop floor of vehicle diagnosis. The users main concern is focused on operations rather than keeping a record of that operations.

This enhances the operational productivity of shop floor and maximizes the throughput of the operations.

2.2 Objectives of The System:

There are three primary objectives of the system:

- Ensure the delivery of high quality systems.
- Provide strong management controls.
- Maximize productivity.

The data available/provided is the base for performing operations. This available data is the data on which various operations can be performed. And the output of the operations is nothing but considered as useful information for human opeartions to perform.

The proposed system is capable of acquiring the data from real world and converting that data into machine/electronic format. The current trend of performing the operations is to manually recording the data and analyzing the operations to be performed.

The proposed system fully automates the process right from the start till the end of specific operations that are performed. The system is

designed in such a way that it is capable of identifying the past operations, current operations to be performed and future possibilities.

The system is build in such a way that it is user-friendly in all different operational phases. It is capable of working in different environments and on different platforms.

2.3 User Requirements:-

User Requirement is a document that defines what a proposed system must be capable of doing to solve the problems of a defined set of potential users of such a system. The user requirements should be completely independent of any solution-oriented bias and must use terminology from the problem domain of the users. It must be understandable by the intended users who must "buy in" to it.

Therefore it is most unlikely to be created using a conventional requirements-analysis method, since these introduce solution bias, representations, and concepts that are rarely understood by (and are irrelevant to) the users. The User Requirements describes the business needs for what users require from the system. User Requirements are written early in the validation process, typically before the system is created. They are written by the system owner and end-users, with input from Quality Assurance.

Requirements outlined in the user requirement are usually tested in the Performance Qualification or User Acceptance Testing. User Requirements are not intended to be a technical document; readers with only a general knowledge of the system should be able to understand the requirements outlined in the user requirement.

The user requirements of the user are very specific regarding the functionality of the system. The client not only want the system to meet the current system functionalities but also wants such kind of system that will meet the future requirements of the client.

The user needs the system to be simple for user interaction as well as the system should be able to perform complex functionalities meeting the clients expectations.

The system should have basic features and the newly added features. It should be able to adopt change resulting in greater flexibility and robust behavior.

The system will be operated in different geographies of regions and is expected to work same in all conditions.