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Autonomous vehicle using car to car interface

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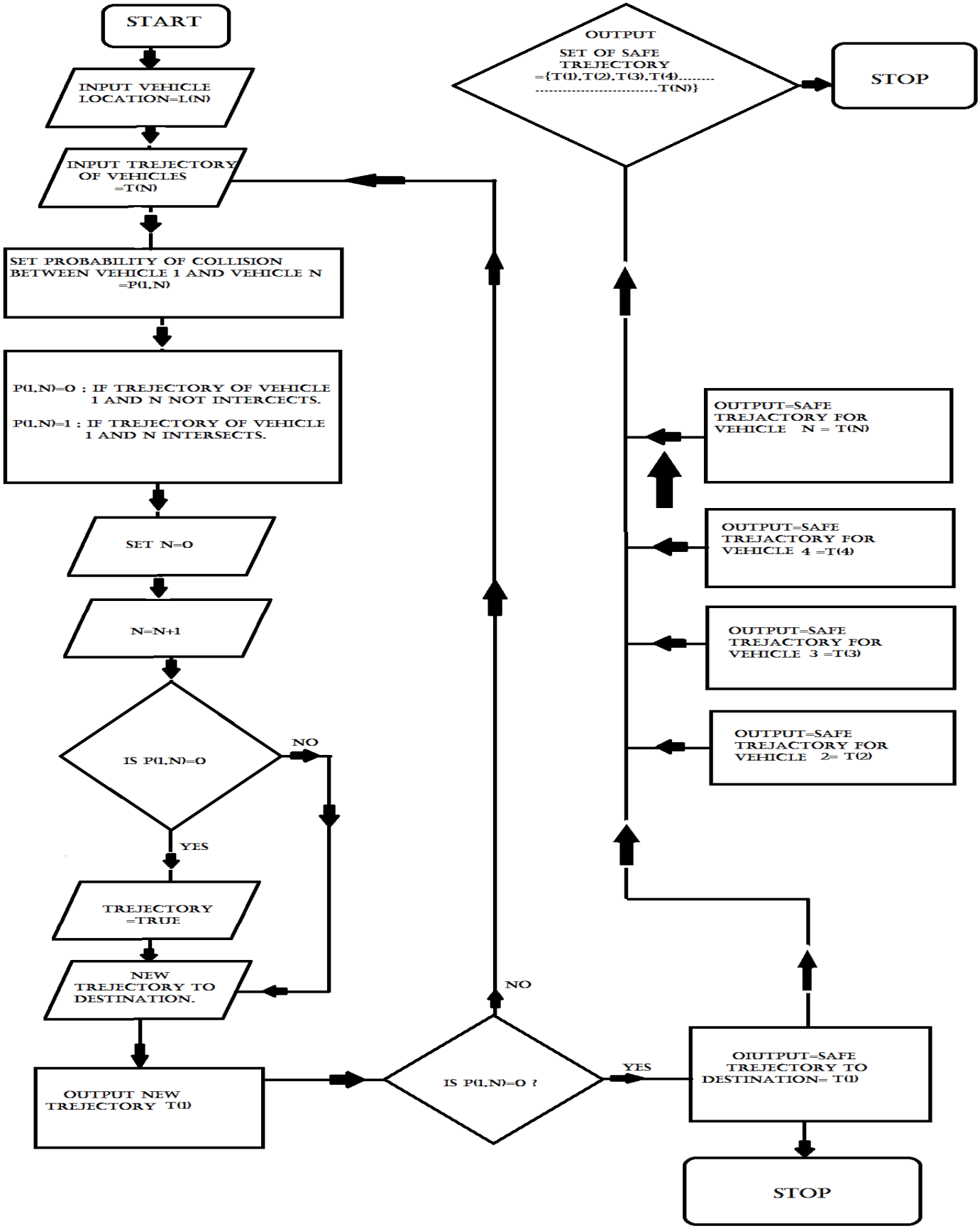
Abstract
Growing population is bringing major challenges like transportation of man and goods due to increased traffic. These problems are mainly in cities, but these sometime leads to accidents and loss of lives. Idea is to design a smart network of vehicles that uses Artificial Intelligence and supercomputers to create an interface between each other so that they can accurately predict their position with respect to each other and predefine their paths. This interface can provide us a situation where there are no traffic signals and cars are going smoothly in random directions with an offset of as close as inch. This situation can be effectively compared to a soccer game. While running a soccer game on a computer program we can consider that we created a field of soccer as big as a city with streets, and we feed the program locations of all vehicles like players of a computer soccer game in 2D. Now, if only a mobile processor can play that game so efficiently that ball will be in goal in spite of complicated locations, motions of players.so imagine what a Smart Computer with artificial intelligence can do with the locations of vehicles (analogous to players) and destination (analogous to goal) game in a big field that we so call as a city, with the help of AI and control system we can play this game of vehicle and destination as efficiently as possible. The problem with current traffic system is that the driver know only about few cars ahead of him but know nothing about all at once, this leads to unexpected in counter of vehicles and finally accident.. So an AI who knows all the coordinates of vehicles and which can be controlled by it (Partially) will reduce the probability of collision to Zero.

Keywords: Driverless car, Integrated Circuits, Smart Circuits, Smart Computer, Car to computer interface, Artificial Intelligence

1. Introduction
dea behind this interface is a sophisticated AI based network system, totally made to assist human with their automobile. It basically uses MAN (metropolitan area network) to create an interface between a supercomputer and all the vehicles in a city in real time. We are making an interface between a master system (AI) that will use MAN network to locate the position of a vehicle on a road and solve the algorithms so that it can control and assist all the vehicles in such a way that they reach their destination without any collision, in a shortest traffic free path. Each vehicle in a city will be installed with a radio based communication system that is based on the MAN internet protocol language of a city. This device will create an interface with the vehicle and its location in a city, this data will be live feed to a supercomputer with AI to process the interface between all the vehicles, their locations and speed, collision probability, traffic jam chances and this AI will solve these complicated algorithms of vehicle-destination game like a soccer game. The processed data will be feed backed to the vehicles that will semi-automatically control the vehicle with speed commands, directions commands, break commands in mere microseconds and at the rate of hundreds of commands per second. All vehicles will be partially controlled by AI and the driver is only needed to follow the live instruction from AI for a smooth ride, if he tries to break the orders then AI will alarm him and will force the vehicle to follow those predefined path.

2 MAN Network
MAN:
Metropolitan area network that will make the grid network around a city to support in creating an interface between vehicles. It have an advantage over GPS i.e. - GPS is only one way communication, it only tells us where are we and takes no feedback to create an interface.So, here we preferred MAN, it is like WAN or the INTERNET but only have different internet protocol which is totally in under control of officials. A special type powerful MAN system will be installed in a city with traffic problems, this will cover the city in grids of radio and microwave EM wave signal network, this will create a foundation

for radio transmission interface between vehicles and the AI or a Supercomputer installed in that MAN network to solve the algorithms of locations.

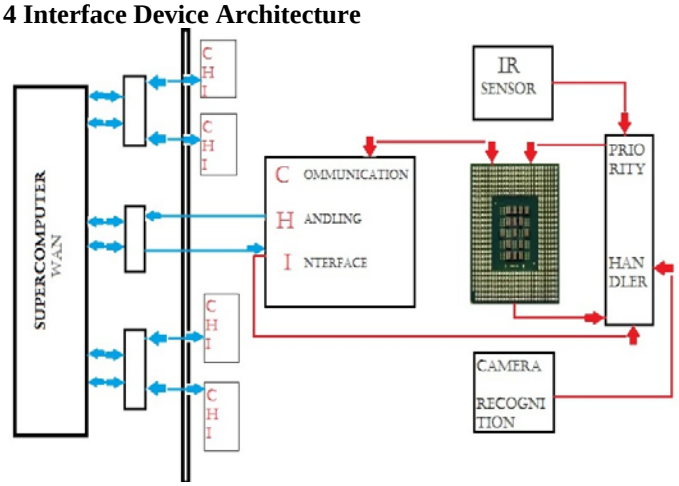


3 Artificial Intelligence

It is the brain of this system. This is a predefined algorithm that will process the data from the vehicles like a soccer game of vehicles and destination on a large scale to find the shortest, most efficient way of reaching the destination without any accidents. It will control every vehicle partially or on a priority

basis. The driver will have to choose the destination and the data will be processed to get live feed or real possibilities to reach the destination, this will include the speed of other vehicles on that path, there separation, these all will be monitored by AI.

4 Interface Device Architecture



It Consist of a radio-microwave based communication system. It will have an on-board small processor to simplify the data at lower scale.

Synchronised with cameras on circles and a panoramic [180-degree] view camera on-board of car to avoid and collision to humans. A highly sensitive IR sensor to recognize humans and there location nearby, this live feed data will be processed in the master computer to pinpoint the human and animals. Will be installed with a proper id and the dimensions of vehicles will be preloaded in master computer so that a proper image of actual dimensions can be processed for precise accuracy.

#Two wheelers will be installed with cheap transmitters to get there locations in live feed.

5 Elimination Traffic Problems

Traffic jam is simply a human ERROR that is caused by the sum of the reaction and response time of cars standing in a line, imagine a long line of cars at an obstacle, when first car starts to move it takes some amount of time for the second car to respond to it(depends upon the reaction time of driver) so if there are many no of cars than we will get a sum of response time, which is a large amount of time, and sometimes the no of vehicles adding to the line exceeds the no of vehicles leaving it because all the cars do not respond at the same time to the response of first driver, this leads to traffic jam, our AI system will force all the vehicles in a line to respond at the same time so that there is no role of response time in a traffic.so technically speaking that this will allow all the vehicles that a road can hold to move freely on the road without and delay in time or this will work like a pure reflex action.

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