Personalised Driverless Transport System.

Introduction

One of the main shortcomings of any public transportation system is its inability to provide a personalized transport solution. With the driverless car concept becoming almost a reality, personal touch to the public transportation is a step closer. There has been successful real-time tests done on driverless cars in urban environment.

The conceived system takes this concept one step further.

System Components

The system contains the following subsystems.

- Electrically powered (using storage battery) main vehicles which are publicly owned with all communication, road sensing, and robotic devises.
- Asphalted unidirectional pathways (similar to the existing roadways)
- Main vehicles docking location in each housing, business unit (similar to parking garage)
- Mini-vehicles, owned by individual users which are also powered by electrically charged battery.
- Main computer system to control the movement and dispatch of public vehicles.

The technological requirements include dGPS, wireless communication, high-end computers, robot controlled self driving system, precise mapping and position identification system, real-time road monitoring system.

System Operation

The main system operates as follows: the user initiates the communication by requesting a vehicle from a current location using mobile phones capable of relaying the location. Upon the request, the central control computer dispatches the vehicle. The vehicle reaches the docking location of the user’s house through unidirectional pathways in driverless mode. (Unidirectional movement though increases the length of travel, provides safer movement by minimizing the conflict with other driven or driverless vehicles.). Upon arrival of the main vehicle, the user docks-in his mini-vehicle (Mini-vehicle is a compact vehicle, with storage space. It can be pedaled or battery operated. It can be single seater or multi-seater).

Upon docking, the user enters the destination in the main vehicle console. It drives the user to the required destination in the driverless mode. The user can remain seated in the mini-vehicle or can sit comfortably in main vehicle’s bigger seats. At the destination, the main vehicle parks in designated public parking location. The user detaches the mini vehicle and drives by himself to the nearby locations. (The main vehicle is now available for other users) Since the speed of
the mini-vehicle is low and is compact in size, it can be driven to difficult locations. Upon completing the trip, the user requests the main vehicle again. The central computer dispatches it as per the availability. The request can be booked in advance to ensure availability. Payment can be realized according to the users retention time of the main vehicle and also the distance travelled using electronic payment system.

**System Advantages**

The above transportation system if implemented successfully, can solve many longstanding problems of transportation such as road safety (non-colliding self driving vehicles once perfected, can eliminate the human error, which is one of the major contributors of accidents) and pollution (The above system uses only electrically powered vehicles and they can be powered from the docking locations). It can also provide transportation services to elderly, disabled as well as to the children. It can provide the user a stress free transportation, without the effort for driving.