IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Utility Patent Application (Provisional)

TITLE: Autonomous Driving as a Service.

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FIELD OF THE INVENTION

[0001] This invention relates to the field of autonomous driving technology.

BACKGROUND OF THE INVENTION

[0002] Autonomous driving technology has multiple advantages like safety (less room for human error), reduced traffic congestion, less parking problems. On the other hand, the cost of ownership of fully autonomous vehicle remains the biggest barrier to autonomous driving technology adoption. This mainly due to the high cost of building autonomous driving technology.

Thus, there remains a need for a solution that makes this technology more affordable without compromising on quality and safety.

SUMMARY OF THE DISCLOSURE

[0003] The present disclosure describes a system and/or methods to offer Autonomous Driving as a Service. A fully managed on-demand service, where drivers will be able to add/remove this feature to their vehicle on demand basis like e.g., going for long drive from city to another city. This can be achieved by making the autonomous driving technology vehicle agnostic and external feature that can be easily added and removed. The current invention presents a novel way of integrating autonomous driving technology with the vehicle. The autonomous driving system will be contained in an external kit called external autonomous driving kit. That can be installed/uninstalled to/from the car in few minutes without any special wiring or any modification on the car side.

Thus, the current invention resolves the pricing barrier thanks to the external autonomous driving kit, and on-demand service architecture.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 illustrates an exemplary block diagram of extern removable autonomous driving kit. That can be mounted on any vehicle after an initial setup.

[0005] FIG. 2 illustrates an exemplary call flow diagram of using Autonomous Driving as a Service to request autonomous driving feature for a car owner who subscribed for the service.

DETAILED DESCRIPTION OF THE INVENTION

[0006] In preferred embodiments, FIG. 1 illustrates an example of block diagram of a autonomous driving kit mounted on a vehicle. Unlike existing autonomous driving systems, this kit is not part of the vehicle. It is only added whenever the car owner needs the autonomous driving service like for example when going for a trip. As soon as he finishes his trip, he will return it to the Dealer or the service shop. As you can see in FIG. 1 all the components are designed to be mounted/ unmounted easily. For example, the Lidar is mounted on top of a mounting-set (100). To hold the Lidar securely and provides the necessary power and wiring. Throttle, Steering and Brake actuators are the only exceptions. The next section clarifies the complete call flow.

[0007] In preferred embodiments, FIG. 2 illustrates an exemplary call flow of using Autonomous driving as A Service. It starts by having the car owner subscribing to the service and book an appointment to setup the car to be ready for the service. This work will be done once. It can take few hours to install the Throttle, Brake and Steering actuators as well as necessary wiring and hardware (mounting-sets). After that whenever the car owner requests the service all he must do is getting the external kit components and just plug them with minimum effort. Once done with the service, unplug the components of the kit and return them to nearest service point.

[0008] The service provider owns a fleet of autonomous driving kits and is responsible for the fleet monitoring, management, charging , supply chain , maintenance and upgrade via his cloud based autonomous driving service.

CLAIMS

What is claimed is:

1. An external removable autonomous driving kit that can be moved from one vehicle to another.
2. A fully self-managed cloud based Autonomous driving service that owns and manage a fleet of autonomous driving kits of claim 1. to offer an on demand pay as you go autonomous driving feature.

ABSTRACT

[0009] The present disclosure describes a system and/or methods to offer Autonomous Driving as a Service. A fully managed on-demand service, where drivers will be able to add/remove this feature to their vehicle on demand basis like e.g., going for long drive from city to another city. This can be achieved by making the autonomous driving technology vehicle agnostic and external feature that can be easily added and removed. The current invention presents a novel way of integrating autonomous driving technology with the vehicle. The autonomous driving system will be contained in an external kit called external autonomous driving kit. That can be installed/uninstalled to/from the car in few minutes without any special wiring or any modification on the car side.

Thus, the current invention resolves the pricing barrier thanks to the external autonomous driving kit, and on-demand service architecture.

DRAWINGS

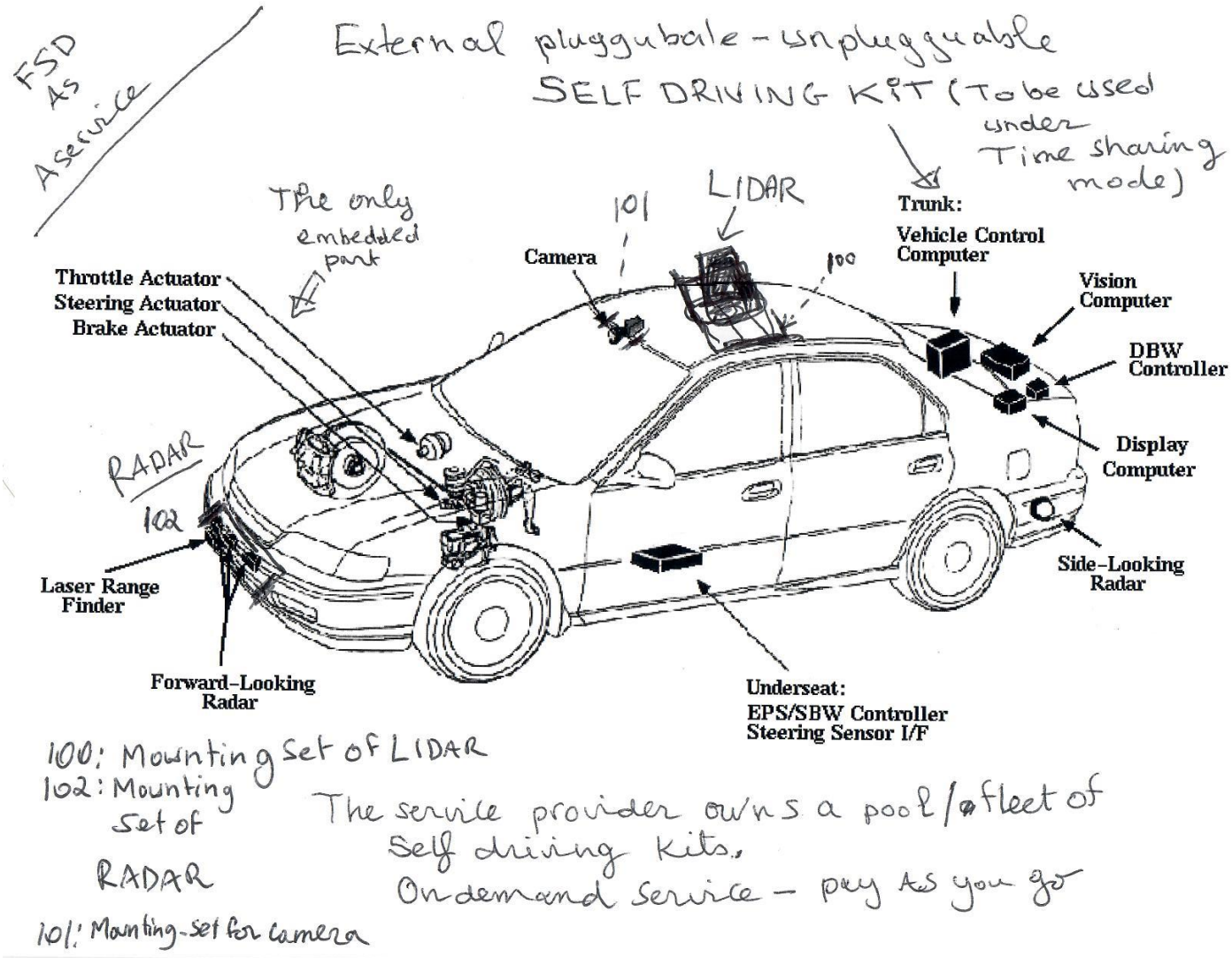

FIG. 1

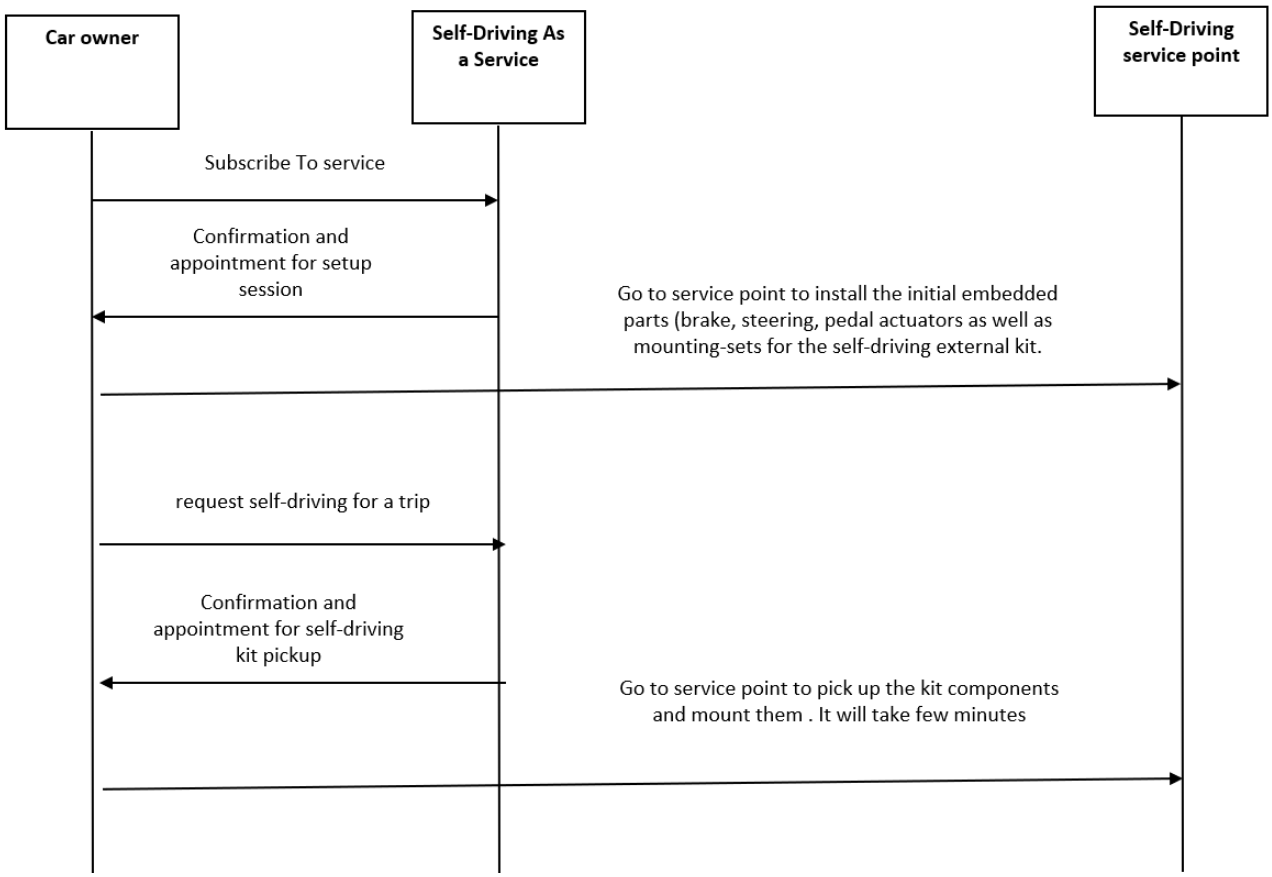
Car owner
Self-Driving As a Service
Self-Driving service point
Subscribe To service
Confirmation and appointment for setup session
Go to service point to install the initial embedded parts (brake, steering, pedal actuators as well as mounting-sets for the self-driving external kit.
request self-driving for a trip
Confirmation and appointment for self-driving kit pickup
Go to service point to pick up the kit components and mount them . It will take few minutes

FIG. 2