# AUTONOMOUS DRIVING ROBOT

make any vehicle, autonomous

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#### **PROBLEM**

- \* Autonomous vehicle development results in **expensive** product
- \* Commonly implemented on vehicles with high customizations
- \* Trivial vehicle issues cause the asset stay idle; loss of revenue
- \* Autonomy is possible only on a designated vehicle; no flexibility

#### SOLUTION

- \* An autonomous **driving robot** in the driver seat operates the controls
- \* **Separate** from the vehicle; Can be **moved** to other vehicles
- \* Has **contingency modes** to address the technology limitations

#### MISSION

We turn **any** standard **vehicle** into a **driver-less** vehicle, as autonomous as other expensive commercial solutions

We help to **increase** the **asset utilization**, by quickly shifting our product to any other standard vehicle

#### WHY NOW?

- \* Social distancing has become the new normal
- \* Autonomous vehicles help reduce physical contact
- \* World **economy** is **down**: COVID-19
- \* Expensive assets go out of commission for unrelated problems
- \* Business world needs solutions to quickly redeploy assets
  - \* Zoomcar vehicle attachments from owners
  - \* Paid vehicle pooling and ride sharing with QuickRide
  - \* AirBnB postings and homestay portals

#### MARKET SIZE

- \* Indian passenger vehicle market grew at a CAGR of 6.2% (2013-19)
- \* Approximate addition of 3.3 million vehicles a year in India
- \* Around **36 million** standard **vehicles** would be available for retrofitting to autonomous mode in India
  - \* Assuming an average car usage of 11 years
- \* A 2% conversion rate with a US\$11,000 kit creates a market size of about **US\$ 8 billion** in India

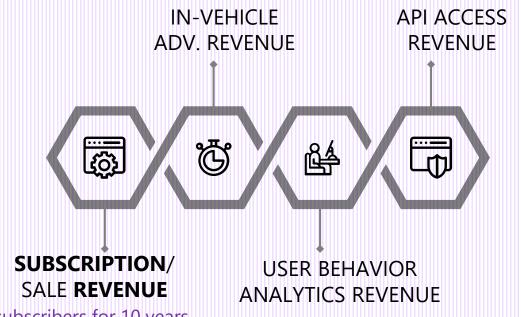
#### **PRODUCT**

We will work on an **autonomous robot** placed in the vehicle, that **drives vehicles** using the human operable controls in the vehicle.

The driving robot's actuators will be specially designed to adapt to any vehicle of similar weight category. It can be removed from the vehicle and quickly assembled in a new vehicle.

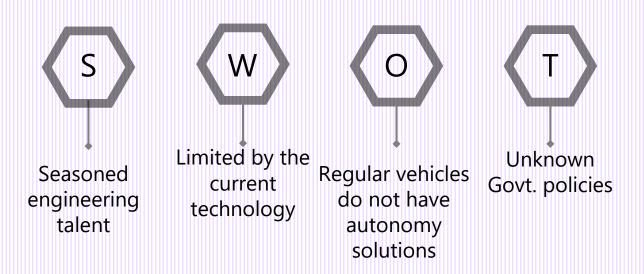
Customized deep learning models, computational resources, and advanced control systems, backed by remote assistance system will enable the driver-less travel.

### **BUSINESS MODEL**



\*Break-even: 33,500 subscribers for 10 years

#### SWOT ANALYSIS



#### PROPOSED TEAM

- \* Selected few AEG Lead Engineers as core members
  - \* I am an **IITM** B.Tech+M.Tech graduate with **14+** years, **4** granted **patents**, and international conference **presentations** in variety of engineering fields
    - \* ABS, BMS, Haptic systems, Electric motors, Optimization and Embedded Systems
  - \* Completed projects related to **self-driving vehicle** technology
    - \* machine vision
    - \* deep learning for object classification
    - \* deep learning for behavioral cloning
- \* Several long-term and short-term **remote contract** employees



#### WHY FUND THIS?

- \* Multi-billion dollar revenue opportunity with high profit margins
- \* Long-term business opportunity focused towards future needs
- \* International market opportunities; everyone has equal chance
- \* Requires **high** engineering **effort** and **time** for execution
- \* Early starters have clear advantage

## THANK YOU



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