**JATAYU- Journey Assistive Technology for Active Yielding and Urgency.**

* **Objective:**
  + - JATAYU is a safety system designed to monitor the driver’s health and purview precautionary domain, to ensure safer journey. This intelligent device is capable of intervening by gradually slowing down the vehicle when predefined safety thresholds are met:
* **Vigilance Framework:**The device is designed to detect signs of drowsiness and other signs of fatigue to ensure the safety of the traveller.

A transmitter prompts an SOS in case the driver experiences a medical condition, such as cardiac arrest or other emergencies, ensuring availability of medical aid on time.

* **Key Features:**
  + **Heartbeat Monitoring:** 
    - A pulse sensor continuously tracks the driver's heart rate. Abnormalities, such as tachycardia or bradycardia, are flagged to initiate safety measures.
  + **Sleep Detection:** 
    - An infrared sensor or camera monitors the driver's eye movement and head posture to detect signs of drowsiness or inattention.
  + **Automatic Speed Control:** 
    - During critical conditions, the system communicates with the vehicle's motor control to gradually reduce speed, preventing potential accidents, by pulling the vehicle over.
  + **Emergency Communication:** 
    - Using a GSM module and GPS, JATAYU sends a pre-programmed message with the vehicle's location to emergency services, ensuring timely medical assistance.
  + **Trigger Threshold:**
    - Using an actuator to apply a targeted stimulus at key points, designed to alert or rouse the driver in cases of fatigue, inattention, or other critical conditions.

* **Impact:**
  + JATAYU addresses the increasing concerns over driver safety and medical emergencies on the road. This cost-effective and scalable system can significantly reduce accidents caused by fatigue or health issues, paving the way for smarter, safer vehicles.