SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF MECHATRONICS ENGINEERING

19MCE402 – AUTOTRONICS

Topic: Car Navigation System, Telematics

Car Navigation System

- An automotive navigation system is part of the automobile controls or a third party add-on used to find direction in an automobile.

- It typically uses a satellite navigation device to get its position data which is then correlated to a position on a road. When directions are needed routing can be calculated. On the fly traffic information (road closures, congestion) can be used to adjust the route.

- Dead reckoning using distance data from sensors attached to the drivetrain, an accelerometer, a gyroscope, and a magnetometer can be used for greater reliability, as GNSS signal loss and/or multipath can occur due to urban canyons or tunnels.

Car Navigation System

Car Navigation System:

1. Overview:

- A car navigation system provides real-time directions, maps, and route guidance to assist drivers in reaching their destinations efficiently.

2. GPS Integration:

- Typically relies on Global Positioning System (GPS) technology to determine the vehicle's location and calculate the optimal route.

3. User Interface:

- Utilizes a user-friendly interface, often displayed on the vehicle's infotainment screen, to provide turn-by-turn directions and visual maps.
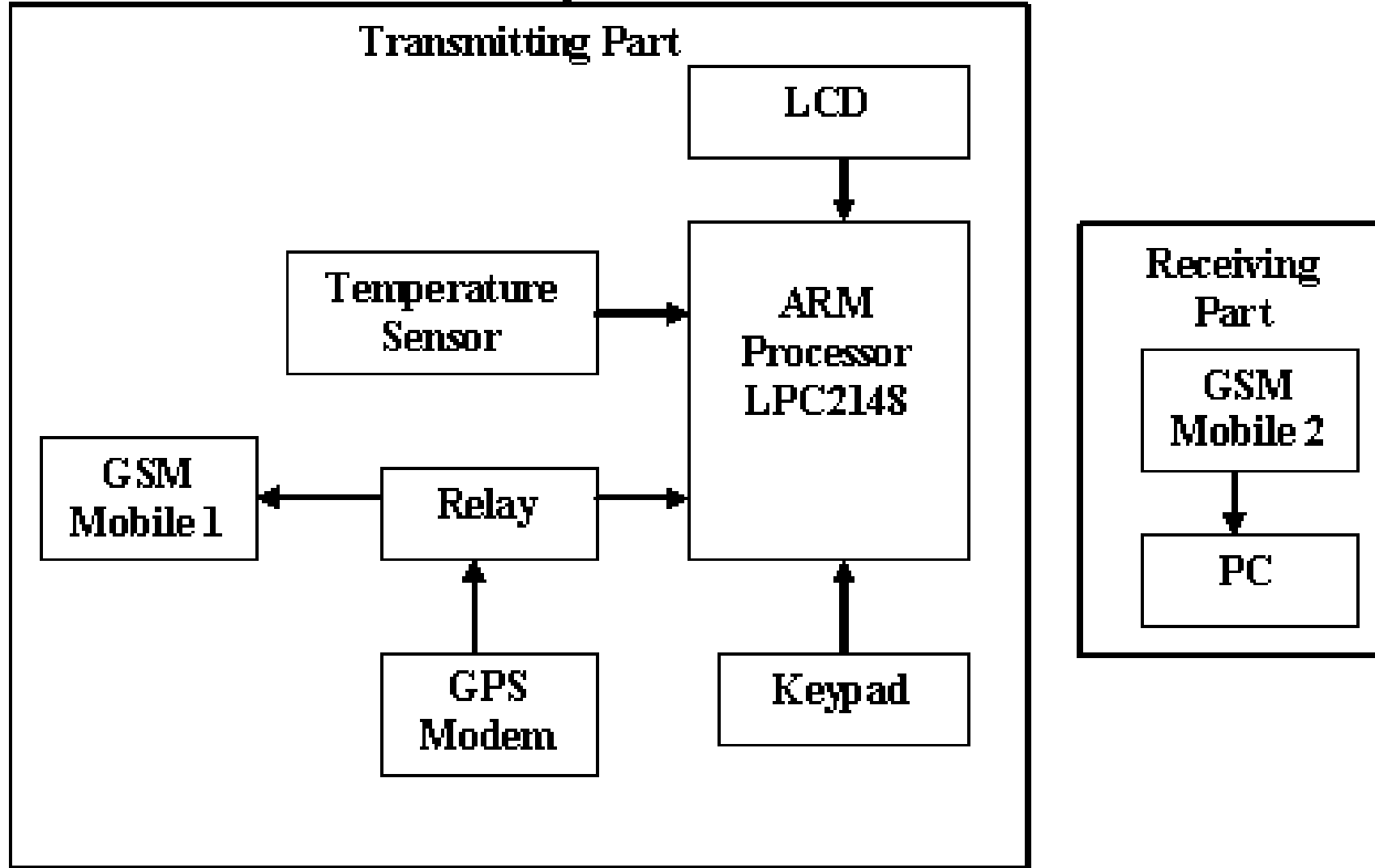
Car Navigation System

4. Voice Guidance:

- Offers voice-guided instructions, allowing drivers to focus on the road while receiving navigational cues.

5. Traffic Information:

- Incorporates real-time traffic data to suggest alternative routes in case of congestion, optimizing travel time.

Telematics

Telematics:

1.Overview:

- Telematics is the integration of telecommunications and information processing, often used in vehicles for tracking, monitoring, and communication.

2.Data Transmission:

- Enables the transmission of data between the vehicle and a central system, providing insights into vehicle performance, diagnostics, and driver behavior.

3.Remote Monitoring:

- Allows for remote monitoring of a vehicle's health, including engine diagnostics, fuel efficiency, and maintenance needs.

Telematics

4. Connected Services:

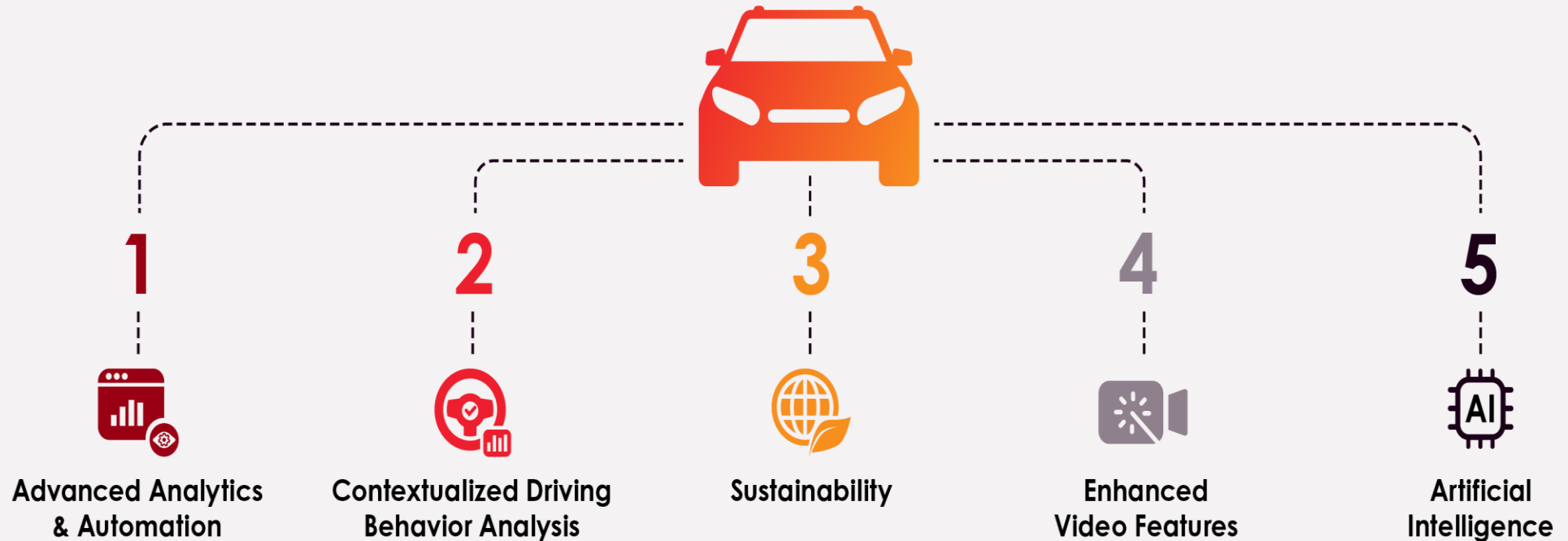1. Facilitates connected services such as remote vehicle start, door lock/unlock, and in-car Wi-Fi hotspots.

5. Fleet Management:

1. Widely used in fleet management to track vehicle locations, monitor driver behavior, and optimize routes for efficiency.
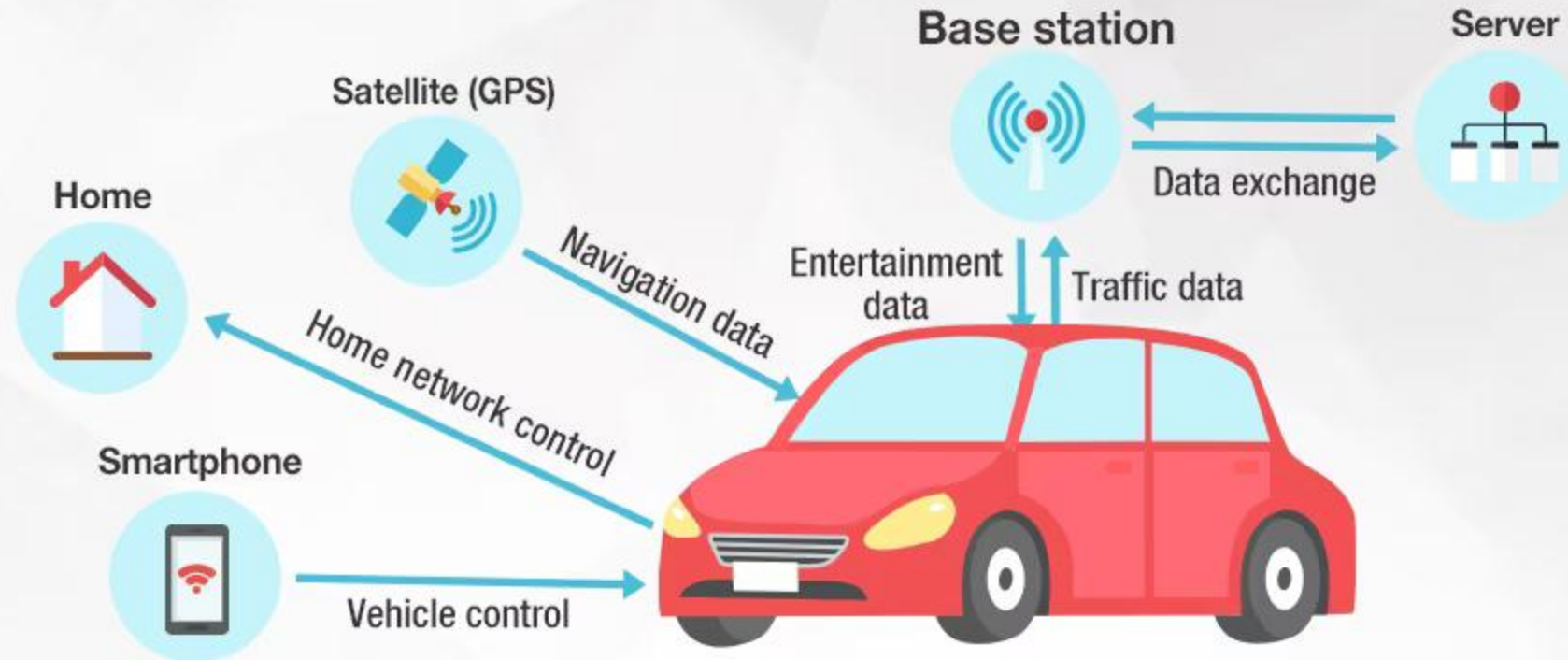
Vehicle Telematics Features

The 5 most important features to consider

1 Advanced Analytics & Automation

2 Contextualized Driving Behavior Analysis

3 Sustainability

4 Enhanced Video Features

5 Artificial Intelligence