



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**

**COIMBATORE-35.**



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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

## **DEPARTMENT OF AUTOMOBILE ENGINEERING**

**COURSE NAME : 19AUB204 – AUTOMOTIVE ELECTRICAL AND ELECTRONICS ENGINEERING**

**II YEAR / IV SEMESTER**

**Unit 5 – Electronics Systems**

**Topic : Infotainment and Telematics**



# INTRODUCTION



- ❖ Infotainment and telematics systems are integral parts of modern vehicles, offering a blend of entertainment, information, and connectivity features to enhance the driving experience.
- ❖ Infotainment and telematics systems are crucial in modern vehicles, enhancing convenience, safety, and connectivity while providing valuable data for vehicle management and user personalization.





# INFOTAINMENT



- ❖ Infotainment systems combine information and entertainment functions into a unified interface, usually accessed via a touchscreen display on the vehicle's dashboard.
- ❖ They aim to improve the driving experience by providing drivers and passengers with various features such as navigation, multimedia, and connectivity.



# KEY COMPONENT AND FEATURES



- ❖ **Touchscreen Interface:** The central control panel for accessing various functions.
- ❖ **Navigation System:**
  - **GPS Navigation:** Provides real-time directions and traffic updates.
  - **Map Updates:** Regular updates to ensure accuracy of routes and points of interest.
- ❖ **Multimedia:**
  - **Audio:** AM/FM radio, satellite radio, CD/DVD players, and streaming services.
  - **Video:** Playback for DVDs or digital video files, often with rear-seat entertainment options.



# KEY COMPONENT AND FEATURES



## ❖ Smartphone Integration:

- **Apple CarPlay and Android Auto:** Allow seamless integration of smartphone apps and functions.
- **Bluetooth Connectivity:** For hands-free calling and audio streaming.

❖ **Voice Control:** Enables hands-free operation of the system, reducing driver distraction.

❖ **App Support:** Access to various applications for music, news, weather, and more.



# KEY COMPONENT AND FEATURES



- ❖ **Vehicle Information Display:** Shows information such as fuel economy, tire pressure, and maintenance alerts.
- ❖ **Wi-Fi Hotspot:** Provides internet connectivity for passengers and other devices.



# ADVANCED FEATURES



- ❖ **Gesture Control:** Allows control of the system with hand movements.
- ❖ **Augmented Reality (AR) Navigation:** Overlays navigation instructions on a live video feed of the road ahead.
- ❖ **Personalization:** Customizable profiles for different drivers, saving preferences for seat position, climate control, and infotainment settings.



# TELEMATICS



- ❖ Telematics systems involve the use of telecommunications and informatics to provide a wide range of services, including vehicle tracking, remote diagnostics, and fleet management.
- ❖ These systems enhance vehicle safety, security, and efficiency.





# KEY COMPONENT AND FEATURES



## ❖ GPS Tracking:

- **Location Services:** Real-time tracking of vehicle location.
- **Geofencing:** Alerts when the vehicle enters or leaves predefined areas.

## ❖ Remote Diagnostics:

- **Health Monitoring:** Continuous monitoring of vehicle systems for faults or maintenance needs.
- **Remote Alerts:** Notifications for issues such as low battery, engine problems, or scheduled maintenance.



# KEY COMPONENT AND FEATURES



## ❖ Safety and Security:

- **Emergency Assistance:** Automatic emergency calls (eCall) in case of an accident.
- **Stolen Vehicle Recovery:** Helps locate and recover stolen vehicles.

## ❖ Connectivity:

- **Over-the-Air (OTA) Updates:** Remote updates for vehicle software and navigation maps.
- **Data Communication:** Communication between the vehicle and external systems for services like traffic information and weather updates.



# KEY COMPONENT AND FEATURES



## ❖ Fleet Management:

- **Driver Behavior Monitoring:** Tracks metrics like speed, braking, and acceleration for fleet optimization.
- **Fuel Management:** Monitors fuel usage and efficiency.
- **Maintenance Scheduling:** Automates maintenance reminders based on usage and diagnostics.

## ❖ Telematics Control Unit (TCU):

The hardware responsible for processing and transmitting telematics data.



# ADVANCED FEATURES



- ❖ **V2X Communication (Vehicle-to-Everything):** Enables communication between the vehicle and other vehicles, infrastructure, and pedestrians for improved safety and traffic management.
- ❖ **Predictive Maintenance:** Uses data analytics to predict when vehicle components might fail and schedule maintenance proactively.
- ❖ **Usage-Based Insurance:** Insurance premiums based on actual driving behavior and usage patterns.



# INTEGRATION AND BENEFITS



- ❖ **Enhanced User Experience:** Infotainment systems provide entertainment and connectivity, making travel more enjoyable.
- ❖ **Increased Safety:** Telematics systems offer safety features such as emergency response and driver monitoring.
- ❖ **Operational Efficiency:** For businesses, telematics improve fleet management and reduce operational costs.
- ❖ **Environmental Benefits:** Both systems can contribute to better fuel efficiency and reduced emissions through improved driving behaviors and maintenance.



THANK YOU !!!