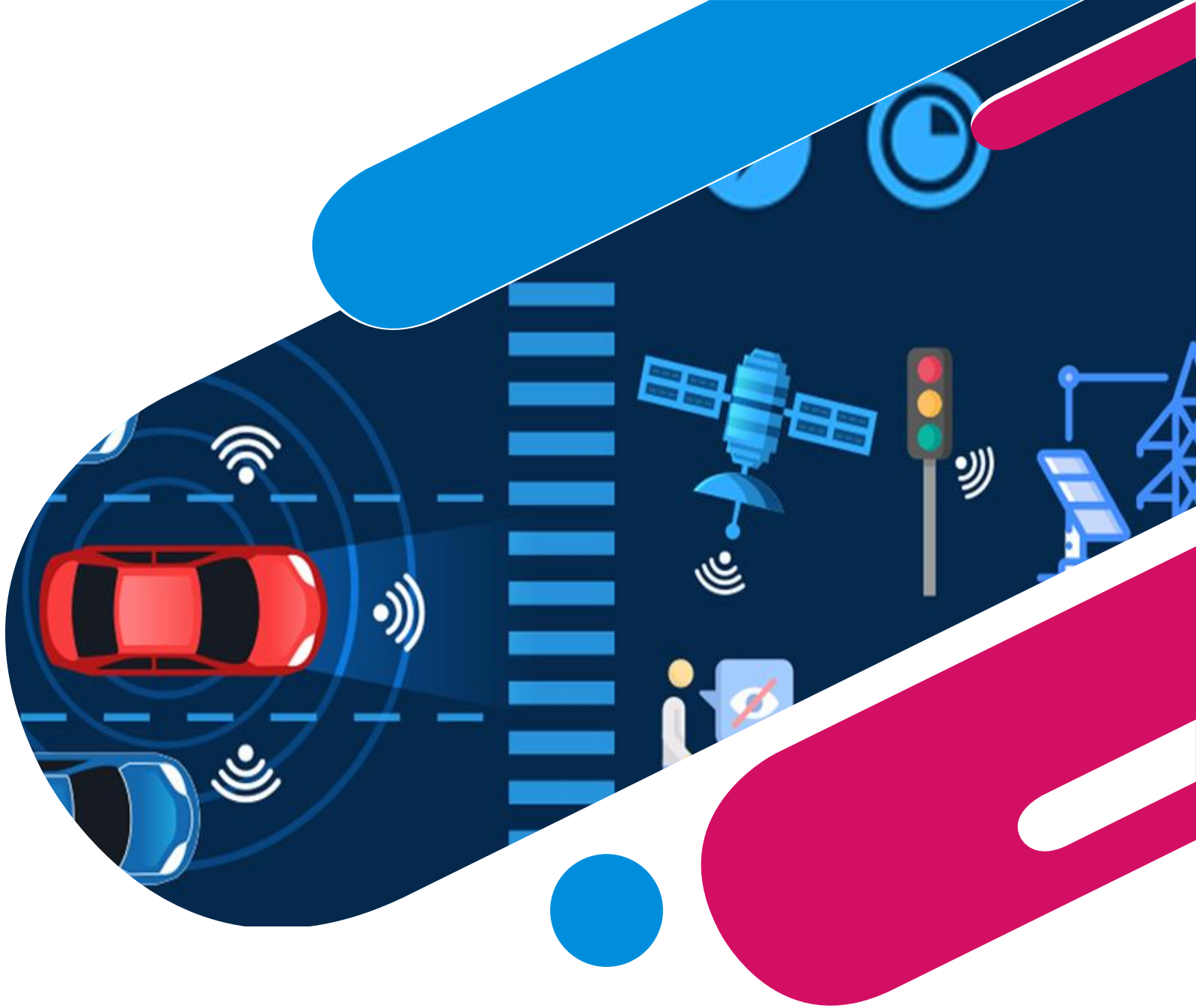
V2V

Project Proposal



Supervised by:

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Meet our Teem

Ahmed Elsayed

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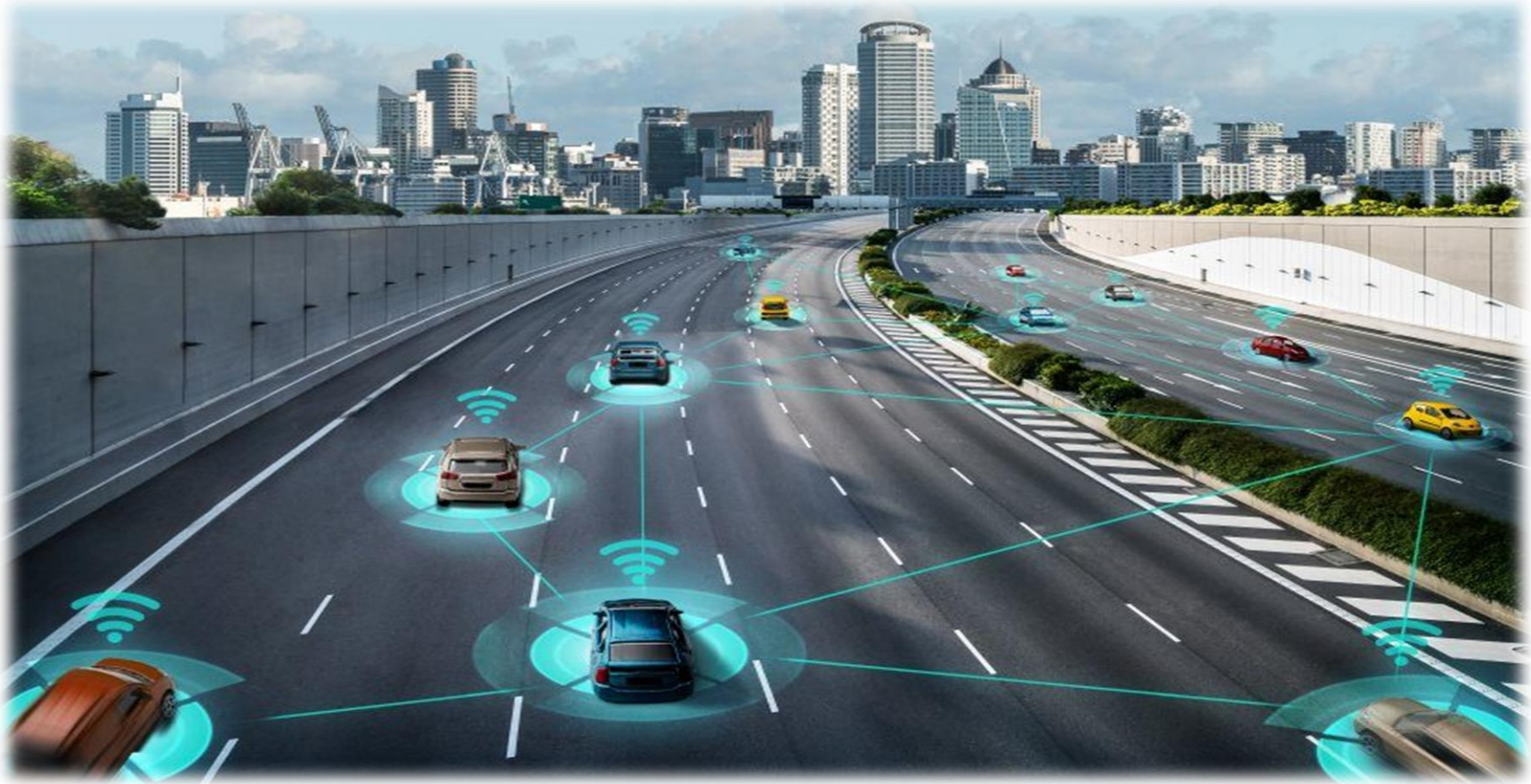
Hosny Abd-Elaziz

Shehab Ahmed

Agenda

1. Introduction
2. Features
3. System Design
4. System components
5. Time Line

Intro



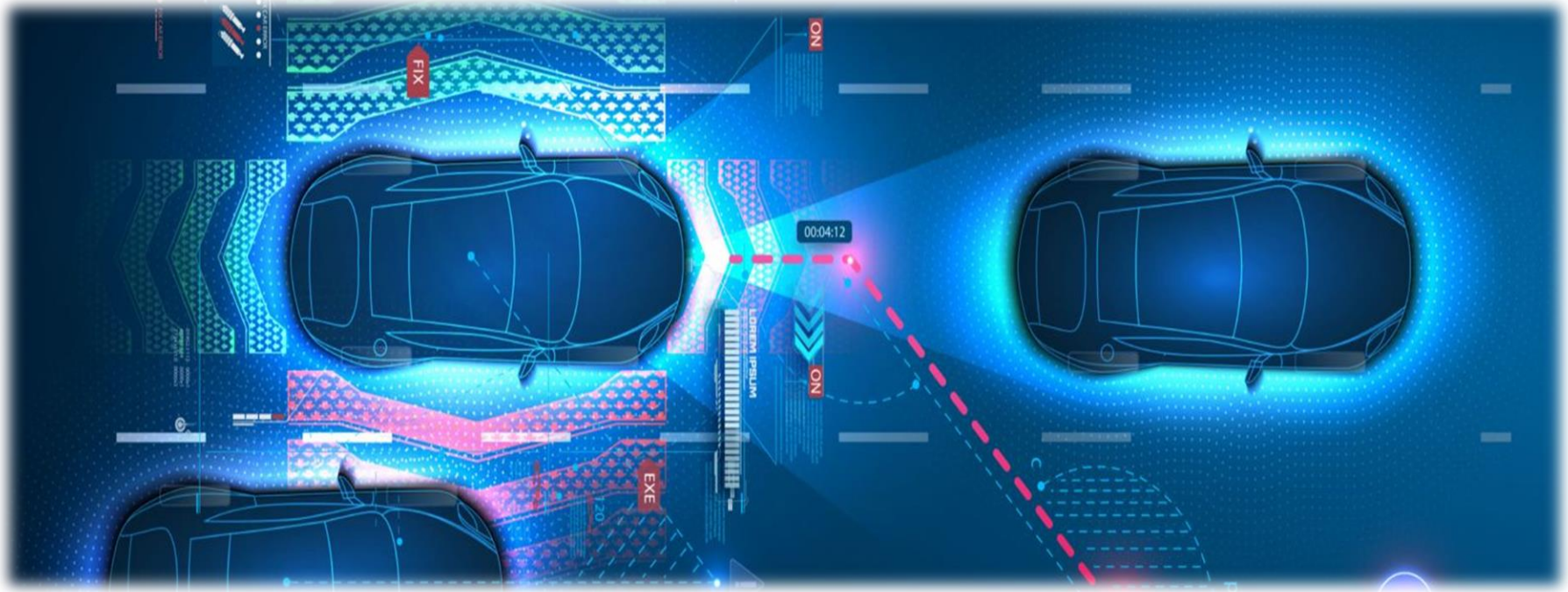
V2V

What's V2V

V2V, or Vehicle-to-Vehicle communication, refers to the exchange of information between vehicles for the purpose of improving safety, efficiency, and convenience on the road.

Features

Here are some common features associated with V2V communication:



Project Features

Main Features

Cooperative Awareness

Collision Avoidance

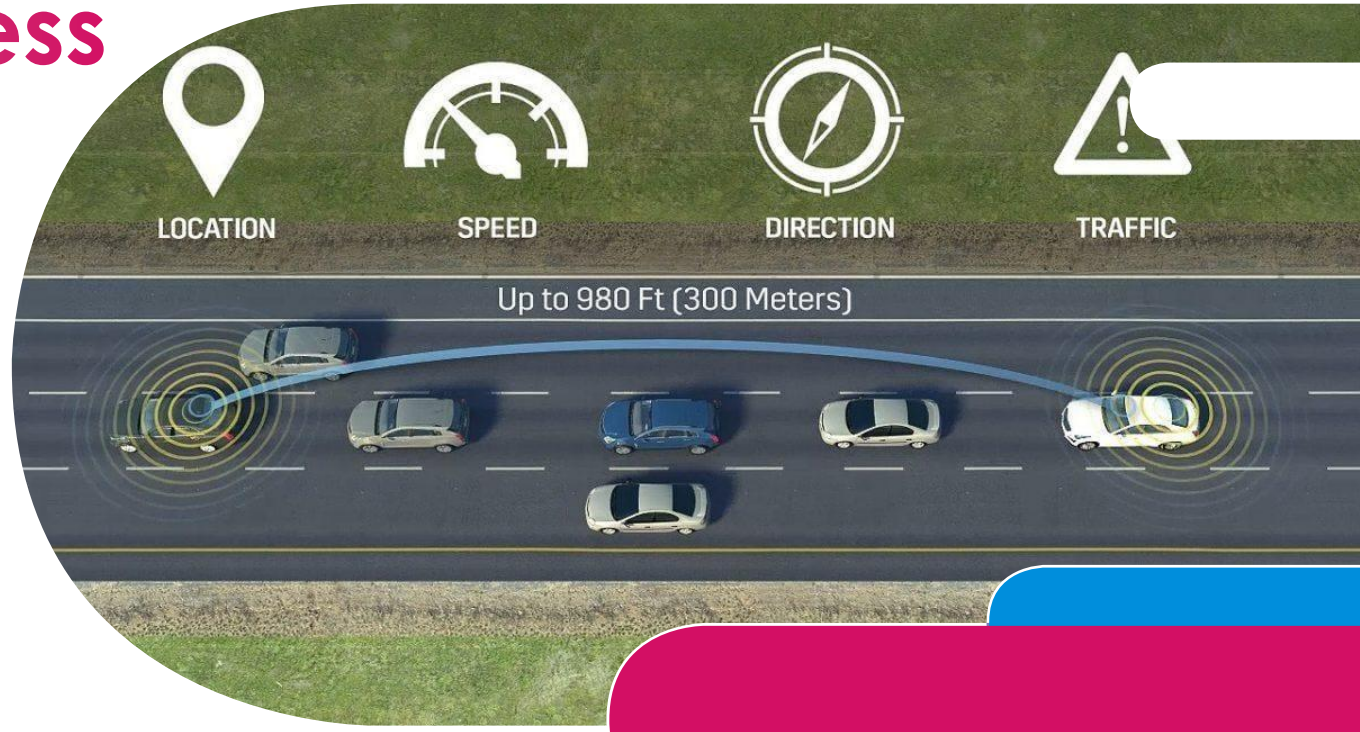
Intersection Collision Warning

Traffic Flow Optimization

Road Hazard Warning

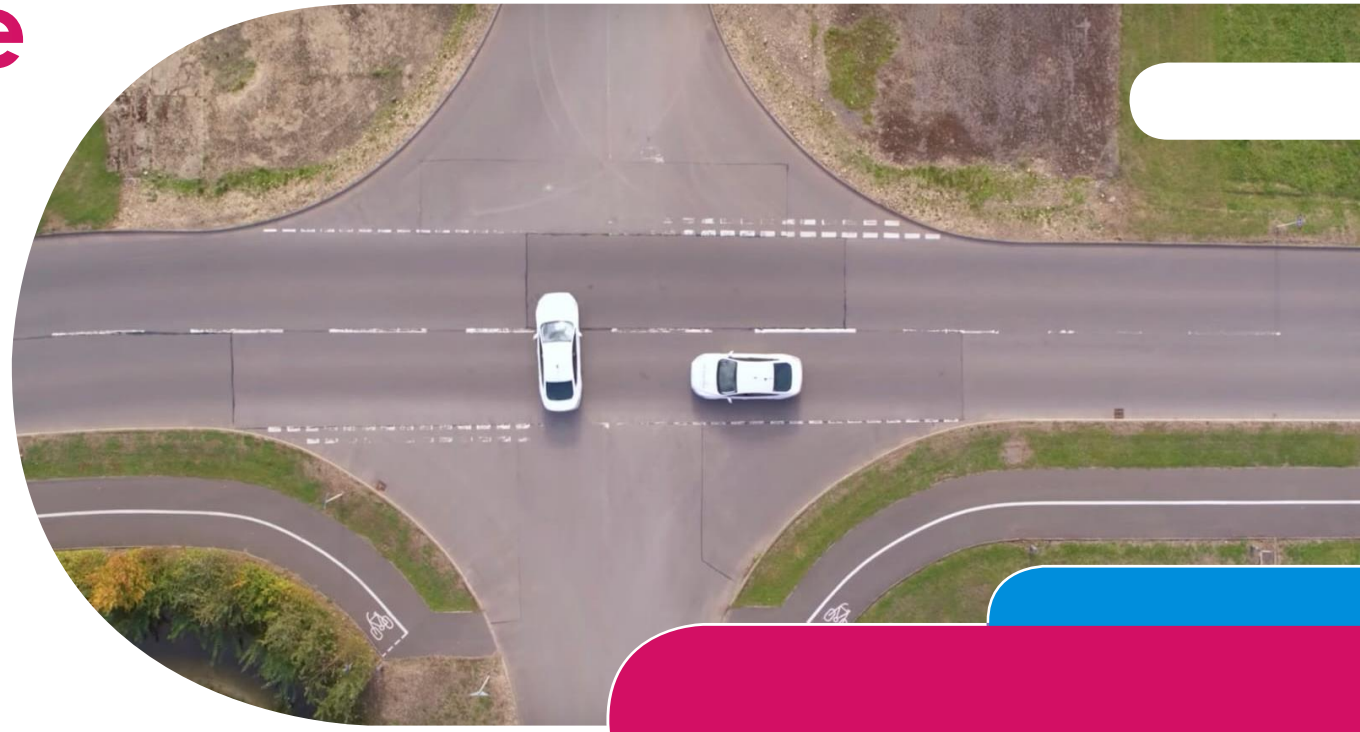
Cooperative Awareness

Vehicles can share information about their position, speed, acceleration, and other relevant data with nearby vehicles. This allows for better situational awareness and helps prevent collisions.



Collision Avoidance

V2V communication enables vehicles to exchange warnings and alerts related to potential collisions. By sharing information about sudden stops, lane changes, or other hazardous situations, vehicles can take appropriate actions to avoid accidents



Intersection Collision Warning

V2V communication can warn drivers when another vehicle is approaching an intersection, even if it is not directly visible. This helps prevent accidents at intersections and enhances safety.

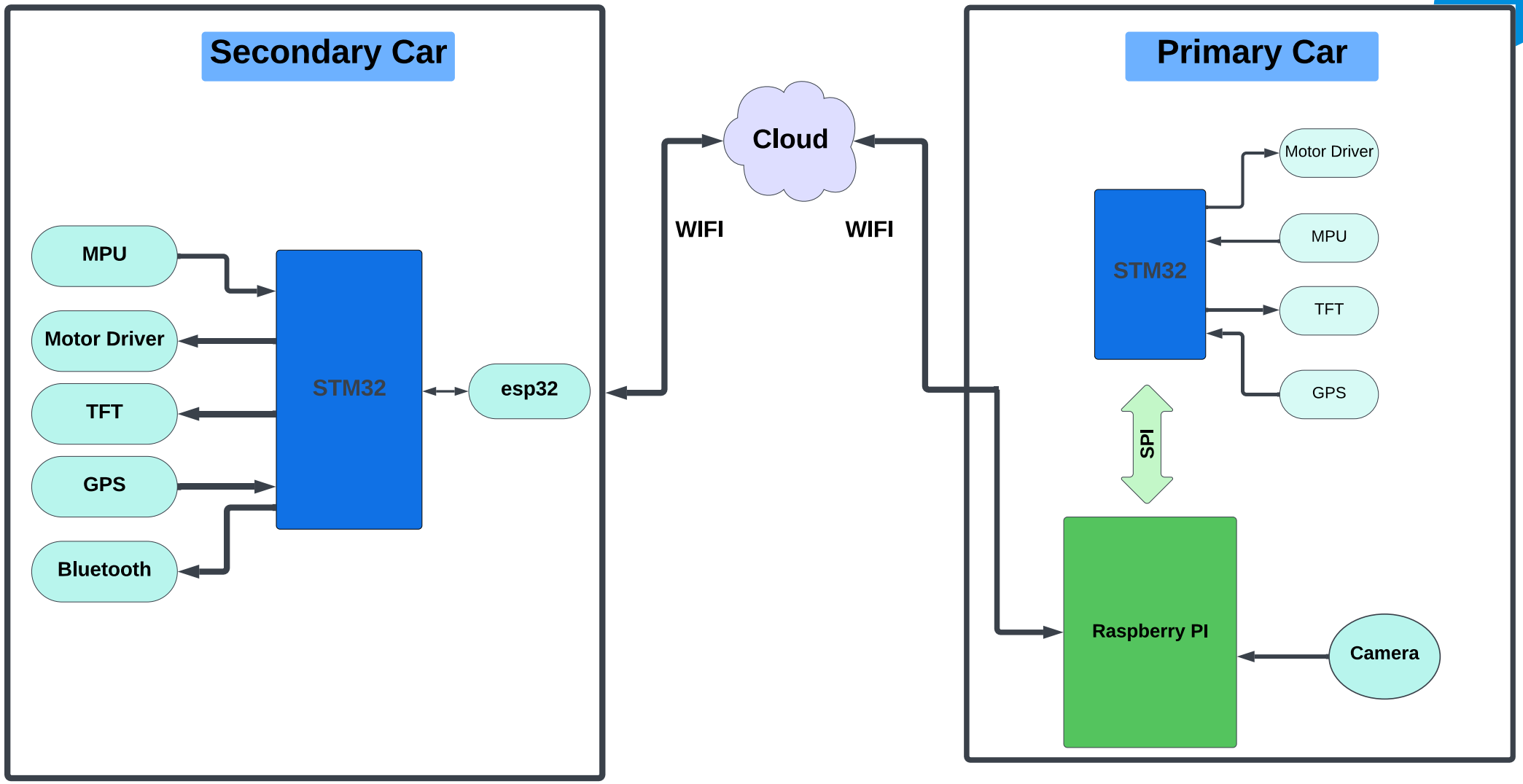
Traffic Flow Optimization

By sharing real-time traffic information, such as congestion, road conditions, and traffic incidents, vehicles can optimize their routes for improved efficiency and reduced travel time

Road Hazard Warning

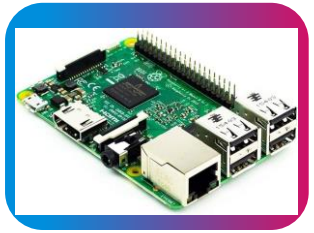
V2V communication enables vehicles to share information about road hazards, such as potholes, debris, or slippery surfaces. This information can be quickly disseminated to other vehicles, alerting drivers and helping them navigate safely.

System Design



V2V

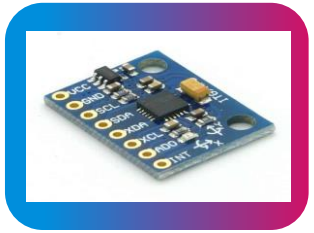
Project Estimated Cost



Raspi 3 Model B
2500

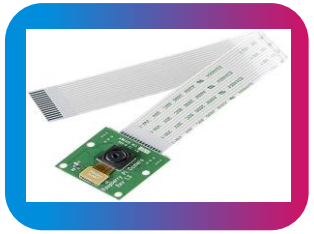
Motors
350*4

GPS
425*2



MPU 6050
125*2

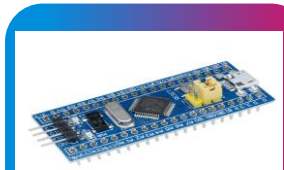
Motor Drive
1350



Camera
1000

Project Estimated Cost

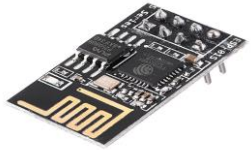
TFT
300



STM32 (F103C8T6)
175*2

Assistant Car
1500

Primary Car body
1500



WIFI
100

Wires & other components
300

Total Cost = 11400

11

Assistant car

12

primary Car

SW&HW

1

Cloud

Connect our project to server (exchange data between vehicles)

2

Image Processing

Connect Raspberry pi to camera to take images & analysis info

3

Linux

To link all project & testing

4

Application

THANK YOU!

Any Questions !